Volume

1

MANAGEMENT AUDIT OF MTX

VOLUME I - OVERVIEW OF THE INTERIM AUDIT

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Submitted to: MTX MANAGEMENT AUDIT STEERING COMMITTEE

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The
Coopers
& Lybrand
Consulting Group

Management Consultants

MANAGEMENT AUDIT OF MTX

VOLUME I - OVERVIEW OF THE INTERIM AUDIT

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LIST OF EXHIBITS

Exhibit I - Organizational Chart

LIST OF REPORTS

Because of their volume, the detailed reports concerning each of the areas examined are bound separately, as follows:

Volume I - Overview of the Interim Audit
Volume II - Review of the CEZAR Project
Volume III - Review of the US SPRINT Project
Volume IV - Detailed Review of SADL
Volume V - Review of the Management Processes & Controls
Volume VI - Review of the Human Rights Issues

I. INTRODUCTION

The Coopers & Lybrand Consulting Group was engaged to conduct a management audit of the operations of MTX, the wholly owned subsidiary of the Manitoba Telephone System (MTS). The fundamental purpose was to review and assess MTX operations and management with a view to evaluating their viability and adequacy.

Given the time constraints and complexity of the issues, the audit was organized so that an interim report could be issued by early November, 1986. This would allow implementation of immediate action, where appropriate, and would serve as the basis for development of an overall course of action.

The first phase of the management audit has now been completed. This interim report presents an overview of the findings in each of the areas reviewed, together with directional and short-term recommendations. Detailed reports on each of the major areas have been prepared and are bound separately because of their volume.

In summary, our review has revealed that MTS has invested considerable funds and effort in developing MTX. Some of the efforts have generated positive results and the potential for future returns does exist. However, there are significant problems and risks in each of the major project areas we examined, as well as in the management processes and controls. These should be dealt with promptly.

II. CORPORATE BACKGROUND

MTX was incorporated on January 15, 1982, as a wholly owned subsidiary of MTS. Interviews with senior managers and board members revealed that the prime rationale for creating MTX was:

- The legal requirement to have a subsidiary for potential participation in the Spectrum management contract between the Government of Canada and the Kingdom of Saudi Arabia;

- To deploy surplus MTS personnel because of the economic downturn of the early 1980's; and

- To provide an additional source of net revenue to offset declining MTS profitability.

More particularly, MTX set as its mission the following:

- To be a high quality provider of telecommunication services outside of Manitoba in areas where MTS has assured expertise and resources;

- To be financially self-sufficient in providing an acceptable return to MTS on its resources utilized;

- To be a good corporate citizen; and,

- To provide a rewarding, challenging and personal growth environment which develops employee competence, proficiency and satisfaction.

Since its inception, MTX has diversified rapidly to offer a broad range of service offerings. Generally, the company describes its services as falling into three basic categories:

- Consulting;
- Contract labour;

- Engineering, furnishing and installing.

Specific business arrangements made by MTX include the following:

- Direct sales by MTX, e.g., for Shared Tenant Services and Equipment;

- Joint marketing agreements, e.g., for Total Network Management;

- Distributorship, e.g. Teleficient, LINE-1 and CDR;
- Equity investments, e.g. SADL, GRASSROOTS, INET;
- Consortia, e.g., CCI

Throughout its history, MTX aggressively pursued opportunities in various world markets. At the time of this management audit, some 21 projects had been completed for a total value of $2,497,000. Major projects underway or in development at the time of the audit include the following:

- A co-investment with Cezar Industries Ltd. (CIL) in INET to market certain call forwarding technologies;

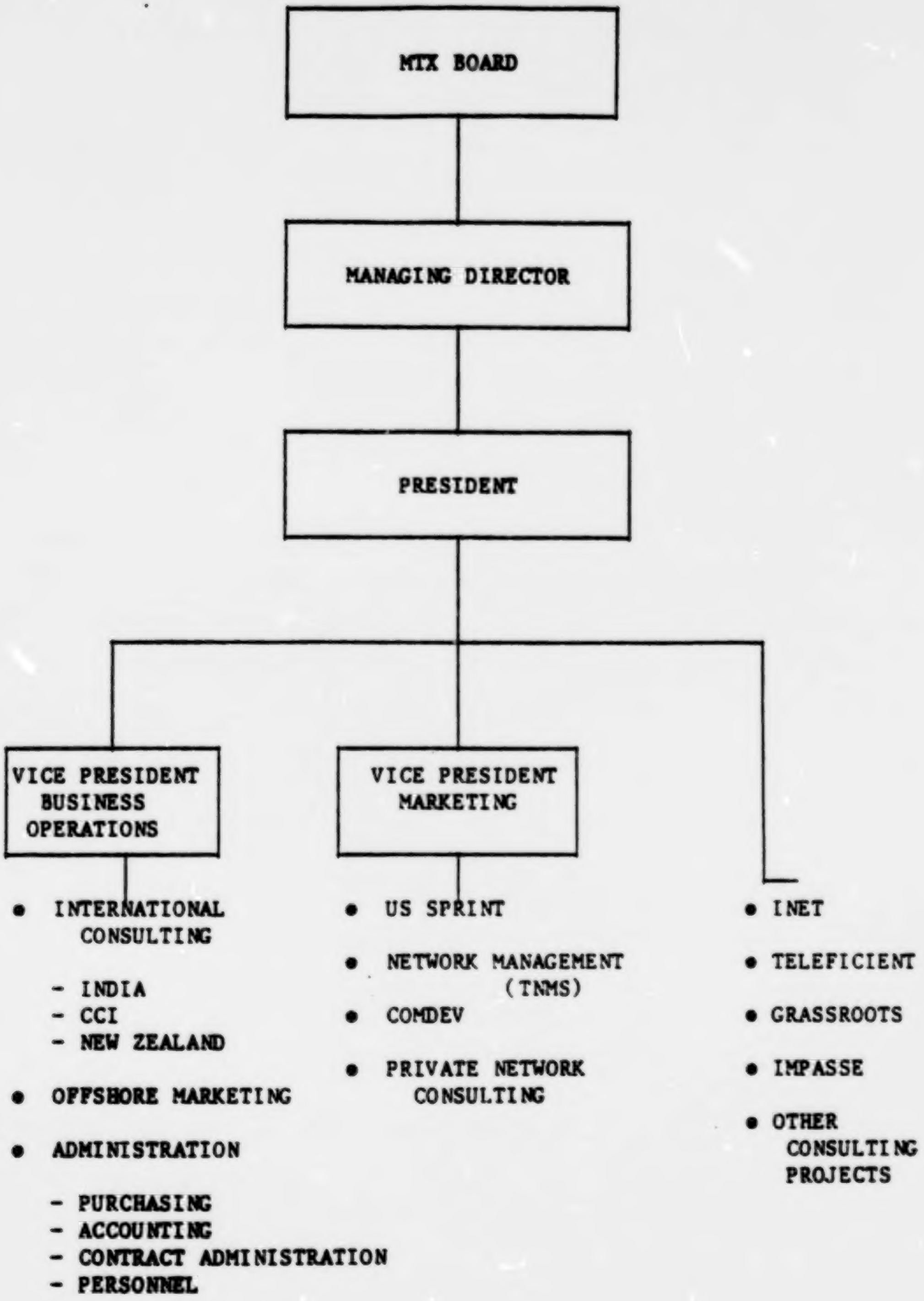
- A contract to design, develop and implement a Network Management System for US SPRINT;

- A 50% interest in Saudi Arabia Datacom Ltd. (SADL) to market services in Saudi Arabia.

In addition, 8 other projects are currently in various stages of development.

MTX ORGANIZATION CHART
EFFECTIVE SEPTEMBER 1986

EXHIBIT I


MTX BOARD
MANAGING DIRECTOR
PRESIDENT
VICE PRESIDENT BUSINESS OPERATIONS
VICE PRESIDENT MARKETING
• INTERNATIONAL CONSULTING
- INDIA
- CCI
- NEW ZEALAND
• OFFSHORE MARKETING
• ADMINISTRATION
- PURCHASING
- ACCOUNTING
- CONTRACT ADMINISTRATION
- PERSONNEL
• US SPRINT
• NETWORK MANAGEMENT (TNMS)
• COMDEV
• PRIVATE NETWORK CONSULTING
• INET
• TELEFICIENT
• GRASSROOTS
• IMPASSE
• OTHER CONSULTING PROJECTS

With few exceptions, MTX management and staff were drawn from MTS and, as MTX's business and project mix evolved, so did the organization. Currently, the MTX organization is as depicted in Exhibit I.

Throughout 1984 and 1985, symptoms of problems with the Saudi Arabia project began to emerge and attracted public attention in the late summer of 1986. Shortly thereafter, this management audit was requested.

III. SCOPE AND APPROACH TO THE AUDIT

The orientation of this management audit has been to focus on a detailed review of the three major ventures in which MTX is currently involved, namely SADL, US SPRINT and CEZAR. As well, we conducted a review of the management practices, operating and financial controls within MTX.

As part of the audit, we have also:

- Examined corporate records, contracts, reports and minutes;
- Interviewed current and former employees, officers and board members of MTX; and
- Examined the application of MTS, and government policies and legislation concerning human rights, as related to the SADL project.

Throughout the review, regular meetings were held with a Steering Committee comprising senior government and civil service representatives. This interim report presents our findings at this time, together with recommendations for short and medium-term action.

IV. SUMMARY OF KEY FINDINGS

Because of their volume, our findings concerning each of the areas reviewed are documented in detail and bound separately, as follows:

- Volume I – Overview of the Interim Audit
- Volume II – Review of the CEZAR Project
- Volume III – Review of the US SPRINT Project
- Volume IV – Review of SADL
- Volume V – Review of the Management Processes & Controls
- Volume VI – Review of the Human Rights Issues

This section highlights the major findings in each area.

A. REVIEW OF THE CEZAR PROJECT

1. Study Objectives

The objective of this review of the MTX business relationship with Cezar Industries Limited (CIL) is to assess the relative attractiveness of the ACT and LINE-1 technologies. Additional objectives include:

- Analysis of the contractual and financial commitments with CIL and International Networking (INET), the joint CIL and MTX subsidiary;
- Assessment of the relative strengths and weaknesses of the senior management staff;

- Discussions with current users;
- Assessment of the prospects for completing the technology and requirements for effective marketing;
- Assessment of the overall attractiveness of the venture as an investment by MTX.

Our report presents a number of strategic options consistent with the final objective which was to determine whether to continue this investment, and to evaluate the additional resources, management organization and controls required.

2. Background and Financial Commitments

Commencing in late 1983, MTX and MTS began discussions with Mr. Robert Cezar concerning certain hardware and software which Cezar Industries Ltd. (CIL), a California based company incorporated in Delaware, was developing. In June, 1985, a proposal was presented to the Policy and Strategy Committee of MTS recommending a business arrangement between CIL and MTS in which MTS would get worldwide technology rights to ACT-I and participate in joint product refinement of ACT-II at a total cost of $500,000 U.S. Subsequently, on July 5, 1985, the MTS Executive Committee approved negotiations with CIL, subject to a successful marketing/technology trial and approval of the MTS Board. CIL rejected this proposal and MTX then expressed interest in both the ACT products and LINE-1 as service offerings outside Manitoba.

With the approval of both the MTS and MTX Boards, a document dated October 9, 1985, was presented to the Economic Resource Investment Committee (ERIC) of the Manitoba Provincial Government, requesting approval to purchase worldwide marketing, manufacturing and technology rights for the ACT product line as well as 20% of INET Ltd., a subsidiary of CIL that had been established to manufacture and market the LINE-1 product. ERIC approved this purchase at $2.5 million U.S., based on an expected 18 month payback. In addition to the revenue potential, the benefits to Manitoba were expected to include employment creation.

On November 27, 1985, CIL and MTX signed a document concluding the agreement. Essentially, for a total investment of $2.5 million U.S., MTX had acquired 20% of INET, together with the right to the technology and worldwide distribution rights for ACT, and non-exclusive distribution rights for the LINE-1 technology for Canada.

Thus far, INET, the joint MTX/CIL subsidiary, has not met expectations for LINE-1 sales or profits. The failure of INET to meet these expectations can be attributed to problems with the intended distributor, PARA Group Inc., although other difficulties arose including delays in obtaining FCC/DOC approval.

The original decision making process had some important shortcomings. PARA Group Inc., with only six employees, would seem an unlikely candidate to launch a major new service in 50 American cities, as was planned. While the $500,000 U.S. investment in ACT gave MTX the rights to the technology and worldwide distribution rights, the $2,000,000 U.S. invested in INET and LINE-1 was not as far-reaching. MTX obtained only 20% equity in a company which had no assets other than the LINE-1 technology rights. They subsequently obtained non-exclusive distribution rights for Canada. Cezar Industries Limited (CIL), the other shareholder, obtained 80% of INET in exchange for the transfer of the technology to the subsidiary; these transactions put CIL in a profitable position after three years of operating losses. Given CIL's financial position, and the relative strength of MTX both financially and, presumably, technically, to develop a similar product if it so chose, MTX was well positioned to demand a much larger share in INET than 20%. An objective of obtaining controlling interest in INET would have been realistic.

The contractual obligations of INET are set down in a security agreement with MTX. The agreement gives MTX an interest in INET assets as a guarantee of INET's performance. This security interest can be subordinated to any commercial lender by the INET Board of Directors. While the security agreement expires on November 27, 1986, MTX management have not identified any failure on INET's part which would be covered under the agreement. Existing INET assets included $1,109,170 U.S. in cash remaining from the MTX investment at the end of August, 1986. MTX may also have contractual obligations to Dynamic Interconnect Montreal (DIM) with whom they had a distribution agreement for ACT. Both INET and MTX should take steps to protect themselves under these agreements since these distributors may be in a position to seek compensation if the products are successfully distributed through other channels at a future date.

3. Relative Attractiveness of the Technologies

The MTX/Cezar business relationship revolves around products referred to as ACT-I, ACT-II and LINE-1. ACT-I is a computer product which helps a receptionist keep track of personnel. ACT-II is a more sophisticated product which allows employees to update their status on the receptionist's computer from any location, and use all the features of the PBX such as WATS lines. They can also do other things including remotely program the system to forward their calls to wherever they are. LINE-1 is similar to ACT-II but it is a subscription service; users do not need to have their own PBX. The products also provide various degrees of telephone usage/management reporting. All products including ACT-I, ACT-II and LINE-1 are successfully operational at present.

The risk of market failure with the ACT products is relatively high compared to LINE-1. MTX has worldwide distribution rights, but has no track record in product sales of this type, nor established distribution channels. Given current forecasts, the best MTX can expect to accomplish in the U.S. is to recoup its investment in the ACT technology. At worst, MTX could incur substantial losses in attempting to penetrate the U.S. market.

We believe there is a greater probability of market success with LINE-1. It is a subscription service which at the current price of $19.50 U.S. per month presents less of a market barrier. ACT is sold outright and is dependent on customers having specific hardware (PBX and a personal computer) in place. Discussions with five of the fifteen paying subscribers on the Sunnyvale LINE-1 system on October 8, 1986, indicated a high degree of satisfaction with the service. However, because the system is unique and somewhat complex, there are challenges in terms of the way it is presented and promoted in the market place, and in user-training and/or improved or simplified human interface.

4. Corporate Background and Capability

Cezar Industries Ltd. is headed by Mr. Robert Cezar, as President, Chief Executive Officer and Chairman. He is originally from Montreal and was the Director of Engineering during the launch of CITY-TV in Toronto. He tried to rescue the multi-lingual Toronto station in 1982-83. One of his most celebrated ventures was the attempted take-over of Quebecair in 1982. Although he has no formal university engineering training, he appears technically competent having been personally responsible for the development of the ACT and LINE-1 products. He also described his business negotiating skills as one of his major strengths. The company was formerly a distributor of VCR units, but is now focussing most of its efforts on LINE-1. CIL incurred losses from 1983 through to 1985. A profit was achieved in 1986, due to the MTX business relationship.

Mr. Don Plunkett (President of MTX) is the MTX appointee to the INET Board and is the Chairman. Mr. Barry Gordon, an MTS Vice President, is also on the Board and is a CIL appointee. The remaining two INET directors are also on the Board of CIL. INET has no full-time employees. Resources for the Sunnyvale LINE-1 marketing effort are contracted from CIL and paid for by INET or MTX. Operating expenses are about $25,000 U.S. per month. Subscriber revenues to date have been negligible.

Mr. Cezar is aware of the limited ability of a small company like CIL/INET to successfully market LINE-1. He has assigned the immediate marketing responsibilities to his brother, Mr. Lorne Cezar, to launch the service in Sunnyvale and to attract potential distributors. The ultimate aim is to attract a large marketing organization, such as one of the U.S. Bell operating companies, to market this product. At the same time, additional R & D is under way to develop a subsequent LINE-1 type of technology.

MTX has focused its efforts on technical improvements of the ACT product. Marketing efforts have been sporadic and not very successful. Little marketing effort has been made for LINE-1, although a limited technical trial has been launched. Recognizing a need for marketing resources, an individual has been hired to sell the ACT product. This individual expected to have a sales function, but did not have the necessary marketing support, e.g., marketing strategies, promotional materials, pricing, etc. in place. Limited market assessment of the ACT and LINE-1 technologies was conducted prior to the arrangements being negotiated with Cezar. The poorly developed marketing capability and lack of direction of current marketing resources appear to be weaknesses. It is doubtful whether MTX currently has the marketing expertise or the necessary resources to market any of the products. A market research study was contracted out to Susan Loren, a U.S. marketing research firm. This provided some direction, but resulting forecasts are not promising.

The distribution organizations which were identified to market the LINE-1 product in the U.S. do not have the necessary capabilities. The agreement between MTX and Cezar was contingent on an agreement being signed with PARA Group Inc. PARA was to launch the service in fifty U.S. cities within one year. A small firm, PARA was, in turn, dependent on Telamarketing Inc. to do the actual retail sales. Telamarketing has since gone out of business. While in business, the firm apparently devoted its energies to cellular telephone products rather than to LINE-1.

5. Competitive Services and Technologies

The Susan Loren market analysis report identifies five companies which market products that functionally overlap with ACT-I. All but one supplier has fewer than fifteen employees. The largest, STAR Technologies Inc., has 100 employees, but its major line of business is computer and related equipment manufacturing. Another system which has some similarity to ACT-II, including telephone/management reporting, authorization codes and speed dialing, is produced by OPTIMUM Communications of Sunnyvale, California, called the Opcom XL 150. Data Pro reports that 95 of these systems have been installed. The system is sold by AT&T for $13,000 U.S. compared to $3,500 U.S. for ACT-II.

With respect to LINE-1, there are few similar services currently available. Bell Canada does offer non-remote CENTREX-based call forwarding. AT&T's ISDN network, when complete, will include a service called Access 7 which will be similar to LINE-1. ISDN will handle voice and data at very high speeds and will include a supervisory channel which enables the cost of a call, to be accurately calculated by the accounting system of the calling equipment.

6. Key Business Issues

Substantial financial and human resources have been invested by MTX/MTS in the CEZAR project. By now, at least $4,000,000 Cdn had been invested, including acquisition of INET, purchase of ACT technology and R & D development effort.

Technical problems do not appear to threaten the further development of ACT and LINE-1 technologies. However, further improvements are required and cheaper alternate technologies may emerge within a few years.

The market for ACT is very limited, according to our review. The potential for LINE-1 is more attractive. Virtually no marketing capabilities exist within the above mentioned companies to launch these technologies across North America.

Further investment is required by MTX to continue its involvement in the project. If MTX does nothing or terminates the project, MTX could lose all its current investment of about $4,000,000 Cdn.

7. Strategic Recommendations

MTX's choices appear to be to terminate its involvement with ACT and LINE-1 or to support them in whole or in part. If, for corporate or other reasons, MTX chooses to withdraw from the CEZAR venture, the chances of any substantial recovery of the investment by terminating involvement with CIL/INET are negligible.

Marketing the ACT products is a relatively high-risk venture compared to LINE-1. The strategy most likely to meet the goals of MTX and MTS is the support of INET's LINE-1 sales and the marketing of LINE-1 by MTX in Canada. A number of key moves associated with this strategy are outlined.

Proceed with a market trial with MTS. A well-executed trial will provide essential market information and support INET's efforts. A first step should be to conduct a study of the market potential including the identification of different types of users, target organizations, etc. In conjunction with this research, a business plan should be developed for marketing LINE-1 in Canada.

Secure exclusive distribution rights for Canada. A target for this agreement should not be more than 15%

of gross revenue for royalty payments and hardware leasing/manufacturing. MTS/MTX could recover its initial $2,000,000 U.S. investment in five years with an average of between 5 and 10 thousand subscribers paying $29.50/month.

Negotiate a return of the ACT technology to INET or some third party. Other alternatives might be to arrange a distribution agreement with a major distributor who could provide all product support. MTX would restrict itself to product R & D.

If the market plan is successful, finalize the business plan and secure the necessary financing for a full scale launch. At the same time, joint ventures, e.g., with other members of Telecom Canada, would be pursued for a national launch.

Overall, this strategy is oriented towards cautious, phased support of the investment. It requires a close alignment of MTX with MTS. Management of the project should be assigned to an individual with a proven track record in managing a market trial and launching a new telecommunications service. We would suggest that the current MTX resources be re-assigned to the LINE-1 project. Additional MTS resources will, of course, be required. MTX should assign one individual the responsibility of concluding an arrangement for the disposal of the ACT technology.

B. REVIEW OF THE US SPRINT PROJECT

1. Product Description

The Total Network Management System (TNMS) is a computer-based surveillance, administration and control system that collects and graphically displays surveillance data from network entities and environmental sensors in order that operating personnel can manage and control their network. TNMS is a product intended to reduce the cost and improve the quality of managing the operation of large telecommunications networks.

TNMS is intended to be implemented at US SPRINT in two phases. Phase I will be a virtual copy of the TNMS installation which runs satisfactorily at MTS. In Phase II, the system is redeveloped to run on more modern computers to accommodate the management of a much larger and more sophisticated telecommunications network.

2. Background and Study Objectives

The primary purpose of reviewing the MTX business relationship with US SPRINT was to provide an assessment of project viability. Secondary objectives included:

- Analysis of the contractual and financial commitments with US SPRINT and with the key subcontractors, Digital Equipment Ltd. (DEC) and Microtel.

- Examination of project management, performance monitoring and budgets associated with the project.
- Assessment of the prospects and requirements for completing the technology and successfully concluding the project.
- Assesment of the overall attractiveness of the venture as an investment by MTX.
- Recommended actions to improve performance and reduce risks.

3. Relative Attractiveness of the TNMS System

The successful sale of the Total Network Management System (TNMS) to US SPRINT represents a significant achievement for MTX. We believe this is largely due to the focused marketing effort and attractiveness of the MTS-developed TNMS technology. With the presence of major industry players such as AT&T and Northern Telecom, one must assume that the window of opportunity is probably about eighteen months. If MTX is to be successful in staking out a sustainable competitive position, it will need to secure at least two more large customer contracts while it completes the US SPRINT project.

With the exception of the risk of likely competitive response, which we judge to be high, the market-oriented risks are relatively low for US SPRINT since it appears that there is a market for the product and it builds on MTS's strengths. However, other risks noted below are far more significant.

4. Contractual and Financial Commitments

The initial contract signed with US SPRINT (formerly US Telecom) required MTX to provide a TNMS system which could monitor national networks and accommodate up to 800,000 alarm sources in a diverse, growing and dynamic environment.

In bidding on the US SPRINT contract, MTX assumed the role of prime contractor in a consortium effort. The US SPRINT project utilizes a combination of:

- MTS network administration application software;
- DEC computer hardware, system software and communications, hardware and software;
- Microtel alarm collection and processing software and some hardware; and
- TSB which has recently proposed to develop an interim solution for rapid deployment of some TNMS functionality.

Legal agreements, supporting schedules and related memoranda of understanding define the relationships between US SPRINT, MTX and its subcontractors. These have been under constant negotiation throughout the review and are being modified as of this date. The latest proposal to US SPRINT dated, October 31, 1986, affects all key agreements and is expected to be reviewed by all parties on November 7, in Vancouver. MTX anticipates that further contract revisions may result at that time.

The original financial terms and relative distribution of contract revenues have also undergone substantial revision for the following reasons:

- Initial under-estimation of project scope and complexity;
- Unbundling of Microtel alarm hardware from the original quote;
- Revisions in project scope and deliverables;
- Acquisition of internal development hardware;
- Changes in customer hardware configuration;
- Revised subcontractor price quotations.

The most recent financial division of gross revenue between MTX and its subcontractors is reported to be:

MTX (Including MTS&TSB)	$ 3.7 million	35%
Microtel	$ 5.1 million	50%
DEC	$ 1.5 million	15%
TOTAL	$10.3 million(Cdn)	100%

As prime contractor, MTX bears primary financial and contractual responsibility for the project.

5. Corporate Overview

Our review of project documentation, interviews and observations support findings described below:

- Although the three members of the US SPRINT consortium, MTX, DEC and Microtel, have variously planned to market TNMS in the US Telco marketplace for a number of years, MTX was finally able to capitalize on a sales lead provided by DEC. Nonetheless, MTX has not pursued a policy of premium or value added pricing, including no apparent mark-up on subcontractor fees.

- Microtel will be responsible for most of the new development work in Phase II. Because of the intricacies and inter-dependencies of its relationship with Microtel, MTX must carefully manage the joint development project. If MTX is to achieve its business objectives, it is important that the long-term business relationship between MTX and Microtel support the ongoing technical contract arrangements.

- MTX, DEC and Microtel have the combined ability to become a significant competitor in the market for Network Facilities Management Systems (NFMS).

- Microtel and MTX are proven suppliers of TNMS components. The contribution that one makes to the other has been described as a strategic partnership which should be directed to completing Phase II of US SPRINT to the customer's satisfaction. They should continue to refine an acceptable future business relationship, and to move ahead and compete in the market as it develops. MTX must be careful to position itself to participate in the NFMS market in the most successful manner.

- The relationship with DEC is not entirely clear at the present time. We understand that cooperative marketing arrangements and negotiations are in progress between Microtel, MTX and DEC. DEC may be increasing its focus on certain specific industry markets.

- We have not been provided with a detailed project plan showing detailed task allocations, staffing, milestones and schedules. Estimating for the original bid on this project was extremely optimistic with respect to schedules and costs. This leaves MTX, as overall project manager, exposed.

In summary, the proper contractual arrangements, design authority and operational interfaces must be established between MTX and the other contractors if the project is to be completed with minimum technical risk. Primary exposure appears to be in the allocated roles, schedules, costs and management of the project and its linkages. Furthermore, integration test procedures need to be defined and the schedule for testing, error detection and retesting needs to be agreed.

6. Key Business Issues for MTX

Current indications are that the contract with US SPRINT will not be profitable for MTX. However, the TNMS project does show future market potential, provided that product development and marketing are well managed.

7. Strategic Recommendations

There are a limited number of options available to MTX as follows:

- Withdraw from the project.
- Assume a subcontractor role.
- Continue the leadership role.

Withdrawal from the US SPRINT contract is not indicated by the current situation. We recommend that MTX protect its long-term interests by continuing as prime contractor. It should evolve to a role as subcontractor for future projects in order to reduce its exposure, but continue to realize the potential benefits.

a. Short-term Steps

To be successful as the prime contractor for the US SPRINT project, MTX must exercise effective project management; in order of priority, it must:

- manage client expectations;
- manage the subcontractor relationship;

- manage the technical sub-projects and their linkages.

In particular, MTX must:

- Execute revised, unambiguous agreements with US SPRINT and the subcontractors.

- Improve the level of detail and accuracy in all project roles, performance plans, and delivery schedules, and gain free access to all detailed planning and progress reporting by all participants.

- Re-estimate costs and contract prices, and seek to receive adequate returns commensurate with levels of risk; alternatively, seek to minimize its performance exposure.

- Continue to actively support the marketing of TNMS to other prospective customers.

Overall, this strategy requires close alignment of MTX with its partners, as well as with MTS. Management of the project should be assigned to an individual with a proven track record in managing projects of this type. Currently, some aspects of this capability exist in a number of key management personnel. The additional skills could be obtained by secondment of an individual from member companies of Telecom Canada, MTX, or other external bodies. The entire project must have support and commitment from senior management of all participants in the project. Overall, it must be directed by strong, respected management or else significant losses will be incurred.

As prime contractor, the contract can affect MTX's strategic goals in several ways. Market performance will improve MTX's position as network operations and software experts. This will become more important as stronger market players appear. The MTS/MTX reputation and competitive position can be improved significantly with a successful US SPRINT project that is seen as a breakthrough contract. Follow-on sales are dependent upon initial success and maintaining strong supplier relationships.

b. Longer-term Moves

Once the US SPRINT project is in hand and stabilized, MTS/MTX should consider shifting their role from that of prime marketing partner for TNMS to one of subcontractor. However, prior to effecting any changes, MTX's corporate direction should be clarified and the implications of the changes assessed more fully.

C. REVIEW OF SADL

1. Introduction

The Manitoba Telephone System (MTS) became involved in the Saudi Arabia telecommunications market in the late 1970's when it began seconding employees to Bell Canada International jobs in the Kingdom of Saudi Arabia. By 1981, MTS was entering into a major joint venture proposal with Bell Canada International and Alberta Government Telephones to provide Spectrum management services to Saudi Arabia. Although this proposal was ultimately unsuccessful, it was the rationale for the incorporation of MTX as the international marketing arm of MTS. Within two weeks of MTX's incorporation on January 15, 1982, it had entered into other business arrangements in Saudi Arabia on its own.

On January 24 and 25 of 1982, MTS/MTX entered into agreements with Sheikh Abdullah Al Bassam. These were agreements of intent to enter into a joint venture business in the data communications markets of Saudi Arabia. By April 11, contractual arrangements had been drawn up and executed which laid out the conditions and requirements for MTX and the Sheikh's company, Al Bassam International (ABI), to share as equal partners in the business.

By August of 1982, MTX was sending staff to start up the company in accordance with its obligation to provide management, technical and marketing expertise to the venture. Without the final approval for the necessary business licence and commercial registration, the business was initiated and operated until June, 1983 under the auspices of the ABI business licence. Upon receipt of commercial registration on June 7, 1983, the joint venture company, Saudi Arabia Data Communications Limited (SADL), was launched. It was initially capitalized with equal contributions by the partners totalling SR 4.4 million ($1.5 million Cdn).

Operating losses of SR 1.7 million ($0.6 million Cdn) which had been incurred to the date of incorporation, were capitalized, in part, in the new company by marking up the value of fixed assets transferred into the business from ABI.

The terms of the final commercial registration for SADL had a significant impact on the structure of the joint venture corporate arrangements. Limitations in Saudi law prohibited any but wholly-owned Saudi companies from importing and reselling in the way the joint venture was marketing micro-computer products; thus, two companies were necessary to conduct the intended business. The first, the joint venture company SADL, was intended to provide the technical and management services for the business. These services were to be transferred at a fixed fee to the division of ABI which conducted both the merchandising and technical services aspects to the general market.

By the summer of 1983, staff problems had emerged. In addition, cash shortages were being experienced which indicated the company was undercapitalized at that time. In September of 1983, export financing arrangements were made to help MTX fund the receivables it was carrying as the major supplier to the business.

During 1984, financial problems continued. Major loans issued in September of 1983 for export financing had to be restructured as the business was unable to meet the six month repayment terms. Other than the original capital infusion by the shareholders, no other financing had been established.

At the end of 1984, SADL reported a break even position on operations. However, Datacom Division of ABI, that portion of the venture providing merchandising to the public, recorded losses of SR 4.1 million ($1.4 million Cdn).

The only form of financing for the business in 1985 continued to be the export financing loans. However, in early 1985, Datacom Division of ABI, to whom the export financing agreements had been issued, was unable to meet many of the notes as they came due. Because the loans negotiated with Canadian banks had been guaranteed by either MTS or the government of Manitoba, MTX made the payments as they came due in 1985.

At December 31, 1985, SADL recorded a small loss on operations, which increased to SR 2.3 million ($0.8 million Cdn) after write-offs of equipment and stock. Datacom Division of ABI, however, recorded an operating loss of SR 8.7 million ($2.9 million Cdn). In total, to the end of 1985, the combined operations of SADL and Datacom Division lost SR 17.9 million (approximately $6.5 million Cdn).

In 1986, shortly after world oil prices plummeted, the sales projections were revised downward. By June 30, 1986, the combined loss on operations was just under SR 4.0 million ($1.4 million Cdn).

By July 31, 1986, MTX had added $2.0 million Cdn in shareholder advances to its original $794,000 equity investment and had outstanding receivables from Datacom of $11,754,000 Cdn and from Telecom of $2,049,000 Cdn. In addition, bankdrafts totalling $1,719,735 and $159,160 to Datacom and Telecom respectively were outstanding. By October 31, all but $159,160 of these drafts had been paid by MTX.

2. Assessment of Current Position

There are fundamental weaknesses in the business relating back to its original inception which continue to influence the current position of the business. These are discussed in the following subsections.

a. The Strategic Orientation Is Misdirected

The individual partners' strengths were in data and telecommunications (for MTS) and market relationships (for ABI). The original intent of the shareholders' agreement was that synergies would result when the strengths of the two businesses were combined. The anticipated benefits have never materialized.

The original business plan laid out a multi-approach strategy to market development; one aspect of this was involvement in the micro-processor and related micro-computer product markets. It was not intended to be the main business. However, initial efforts concentrated on the micro-processors, with serious negative results to the data communications aspects of the business. This problem is compounded by the fact that the micro-computer business is not, as was assumed in the original business plan, an easy source of quick profits and positive cash flows. In fact, it is quite the opposite.

Neither MTS, MTX, nor ABI have strengths in merchandising micro-computing products. The joint venture business, however, holds a number of distributorships in these products and made significant investments in staff, organization and facilities toward serving these markets. This is reflected in the annual business plans which, although they are beginning to reflect an orientation away from merchandising, continue to rely on this as the central part of the business.

The partners, both directly and as directors in SADL, have not given the necessary direction to management to change the basic orientation of the business. The purely data communications aspects of the business continue to constitute only a small portion of total annual sales and revenues.

b. Organization and Management

The lack of appropriate direction by the partners has been compounded by inappropriate management skills provided to operate the business. Primary responsibility for day-to-day management rests with MTX as it is the managing partner.

Sales management in the joint venture company appears strong, given the sales increases of the last 18 months. However, these were largely in areas peripheral to the main business of data communications.

Financial management skills are weak. Management and financial information systems have been wholly inadequate to date. Financial management of the joint venture assets, such as receivables, inventory, and cash flows are improving, but still appear to be less than satisfactory. Efforts to provide financial management support from Canada have been unable to resolve these problems satisfactorily.

c. Finance

Financial control is complicated by the corporate structure. MTX is currently dealing with three separate businesses:

- SADL, the joint venture company to which MTX provides staff services only;
- Datacom Division of ABI, to which MTX supplies goods from North American manufacturers and for which SADL provides management services; and
- Telecom Division of ABI to whom MTX provides goods from North American suppliers and staff for technical and managerial positions.

All the goods and services supplied by MTX are supplied on open account. To finance this account, MTX entered into export finance agreements with two banks in 1983. These arrangements allowed six month cash flow financing to each of Datacom and Telecom. However, these financing arrangements have only exacerbated the cash flow problems of the business, and confused the responsibilities of the partners. The effect was that MTS/MTX have now assumed major responsibility for financing the venture in Saudi Arabia.

This type of short-term financing has been inadequate from its inception. In the very first year in which the export financing arrangements were made, 40% of the initial drafts drawn for both Telecom and Datacom could not be met and had to be restructured over a two-year period. In the second year, to March 31, 1985, Telecom and Datacom were able to meet only about half of the notes that came due for payment; MTX met the obligations for the other half. In total, over the four years, to August, 1986, MTX has met 48% of the Telecom notes and 75% of the Datacom notes which have matured. The rationale for doing so has been that the notes were guaranteed by MTS or the government of Manitoba. Neither of the loans in question are to the joint venture company, SADL.

The issue of proportional financing by MTX and ABI is clouded by the corporate structure. The books of account of SADL show equal contributions for share capital and for shareholder advances by each partner. However, the President of MTX has indicated that the intent of the agreement was that the two companies, SADL and Datacom Division of ABI, constituted the real business of the partnership. MTX has never reported the results of Datacom Division of ABI on its financial statements nor identified any real or contingent liabilities for losses of this business. It has, however, been willing to provide unsecured financing on the assumption that Datacom Division was a real part of the joint venture operations. There is no such rationale for the financing and credit terms provided to Telecom. As a result of providing credit, both through accounts receivable and through loan guarantees, MTX held receivables at October 31 for the Datacom Division of approximately $13.4 million Cdn in excess of the equity investment in SADL. It also held $2.0 million Cdn in receivables with Telecom and outstanding loan guarantees of $159,160 Cdn.

The issue of proportional financing is complicated even further. In 1984, when MTX was arranging for bank guarantees from the Bank of Nova Scotia and The Royal Bank totalling $7 million Cdn, SADL arranged independent financing through one of the Lloyd's banks in the Middle East. A line of credit with Lloyd's of SR 10 million was secured by personal guarantees of Sheikh Al Bassam for a total of one-half of the line. As a result, Sheikh Al Bassam was then providing some financing to the business in excess of his equity holdings, as was MTX, although the Saudi partners' commitment was not in proportion to their 50% shareholder status. In 1985, for a number of reasons, LLoyd's rescinded the line of credit and called the outstanding notes. MTX allowed these notes to be paid down out of the operating cash flows of SADL/DATACOM even though it meant that the notes guaranteed through MTX could not be met. By October, 1986, the Lloyd's note was reduced to $200,000 Cdn outstanding.

From the perspective of the banks, the financing arrangements are traditional export financing. However, MTS and MTX financial managers should have recognized that these forms of financing were not used to finance individual shipments, but rather to finance cash flows in general, working capital requirements, fixed assets and accumulated losses of the two divisions of Al Bassam International. This situation can be traced from March, 1984, when the first export financing loans were extended as they matured. It should be recognized that MTX has had full access to the records of SADL and the operating records for Datacom Division of Al Bassam International. Senior financial officers of MTX should have recognized the implications of these transactions, and taken appropriate decisions to meet the financing requirements of the business.

Of equally serious concern is the involvement in forward money markets by MTS on behalf of the joint venture. In June, 1986, positions for three and six months were taken to sell Saudi Riyals valued at, respectively, $5 million U.S. and $7 million U.S. in forward money markets. There are two major concerns arising from this action:

- a portion of the position was taken by MTS on behalf of Sheikh Al Bassam; and

- we are unable to identify any projected cash flows which would justify any substantial portion of the position.

At the time of writing, it had not been established whether or not MTS has the authority to undertake transactions on behalf of a foreign business partner. As well, if this transaction was, in fact, made without real expectations of Saudi Riyal cash inflows, it would represent speculation on a possible devaluation in Saudi Riyals. The cost of this action might exceed $150,000 Cdn in due course.

3. Responsibility for Results

Performance has not been totally unsuccessful. Over a four-year period, the business has generated sales in excess of SR 50.0 million (16.6 millions Cdn) in Saudi Arabia. A number of top quality product line distributorships are held, including those held by MTX for the purpose of supplying the business. A number of major contracts have been serviced and the business holds a strong position in several of the micro-processor and data communications product markets in Saudi Arabia.

These accomplishments, however, are not significant enough to offset the financial losses incurred and the financial risk to which MTX is now exposed.

Responsibility for performance must be shared by both partners. Several key failures have occurred, as follows:

- The fundamental assumption that the business would be able to rely upon marketing advantages through the Telecom Division of ABI and through Sheikh Al Bassam appears to have been unfounded.

- The assumption that a third party would be attracted to provide the much needed additional capital financing has never materialized. Responsibility for this lies primarily with the Saudi partner, Sheikh Al Bassam.

- As evidenced by the financial results, MTX did not provide the necessary management expertise to run the business profitably.

- The directors of SADL, from both MTX and ABI, did not provide appropriate direction nor hold management accountable for performance.

- Both partners have failed to provide the appropriate financing for the venture.

- Both partners failed to recognize early signals of serious problems in the business.

The detailed information to support these conclusions is available in Volume IV of this report.

4. Recommended Course of Action

MTX has encountered a number of difficulties in Saudi Arabia and now finds itself with a major commitment there. It is necessary to determine the opportunities for the business in Saudi Arabia and its viability for the future. Steps are currently under way to gather relevant information which will support this determination, but this information is not yet available.

Following from the difficulties in financing noted above, and in our main report, and the relative financial positions of the two partners in the business venture, it is appropriate for the government of Manitoba to consult, as the owner of MTX, with its Saudi partner, Sheikh Al Bassam, to determine his expectations and commitments to the venture. Concern regarding the government's responsibilities to its customers and its obligations to third parties and employees must also be considered.

Subject to the results of the discussions with Sheikh Al Bassam, it appears that the ultimate interests of the Province of Manitoba would be best served by withdrawing from its Saudi Arabia operations. There are a number of reasons for this:

- Substantial losses have been incurred to date and notwithstanding market assessments that are forthcoming, short-term prospects for profitable operations are not optimistic.

- The economic difficulties faced by Saudi Arabia at this time decrease the likelihood of significantly recovering investments made to date.

- There appears to be an inability to provide appropriate management direction and control to a business as remote as this, and in a country as culturally different from Canada as Saudi Arabia.

- As a Crown Corporation, MTS/MTX has to meet broader policy and strategic objectives that appear to be incompatible with this venture.

Despite the fact that there may be some potential for the future financial viability of the business, we believe that it may be incompatible with the role of a Crown Corporation of the Province of Manitoba. Depending on the outcome of the discussions with Sheikh Al Bassam and the information currently being gathered, it could be necessary to implement the appropriate arrangements for MTX to withdraw from its operations in Saudi Arabia. These arrangements must ensure that MTX is able to meet its obligations consistent with the policies of the Province of Manitoba.

Therefore, at this time, it appears that MTS/MTX should develop a tentative program to achieve the eventual withdrawal of MTX from Saudi Arabia. This program would require careful consideration of the contractual, legal, financial and other obligations of MTS/MTX.

A meeting with Sheikh Al Bassam should be held shortly. The purpose of such a meeting would be to establish:

- the expectations of both partners regarding the future prospects of the business;
- the options and relative positions regarding the partnership arrangements; and
- to advise Sheikh Al Bassam of the government's longer-term position with respect to its investment in SADL.

In summary, in our opinion, it is in the long-term interests of the Province of Manitoba to make arrangements for the eventual withdrawal from the investment in SADL by MTX.

D. REVIEW OF MANAGEMENT PROCESSES AND CONTROLS

1. Background

As part of our management audit of MTX Telecom Services Inc. (MTX), we have examined the company's organization and management control systems from the date of incorporation, January 15, 1982, to date. The detailed report is presented separately in Volume V; this summary report is organized under the headings of:

- Business planning.
- Organization arrangements and reporting.
- Management processes and controls.
- Human resources management.
- Assessment of management personnel.

MTX is a comparatively small organization, operating in a competitive business environment, outside the traditional boundaries established for the business activities of its parent company. The Manitoba Telephone System (MTS) had little or no experience in these markets, and the development of the broader mandate for MTX represented a significant change for MTS. We did not anticipate that MTX would not have the systems and controls which would be found in a mature Crown Corporation. However, we found that there were some critical deficiencies in the way in which the company was organized for operations during its first four and a half years. These deficiencies are described in our detailed report, and summarized below.

2. Business Planning

MTX started business in a comparatively small way, with limited financial and human resources. It is critical for young companies with limited resources to be highly selective in their markets and range of services. During its nearly five year history, there does not appear to have been any planning done which would restrict MTX's focus from a product, geographic or financial perspective. In essence, the MTX business mission has become "to undertake anything in telecommunications outside Manitoba which might be profitable and for which staff can probably be made available." We would have expected a reasonably comprehensive market analysis relative to key markets and, given the Company's mandate for marketing the skills of MTS personnel, an objective assessment of MTS's capabilities in those markets. We did not find that these analyses had been made.

Business planning has been primarily oriented to annual plans, without consideration of longer-term strategy and direction. The planning process has not been well managed; plans have been presented to the Board after the commencement of the fiscal year to which they relate, and approved three to six months into the year. This process provided neither the basis for sound exercise of business judgment nor effective communications to the company's shareholders concerning the appropriateness and risks of its undertakings.

3. Organizational Arrangements and Reporting

Within MTX, there is no clear differentiation of senior management responsibilities along functional, geographic or product lines. Dissimilar functions or activities are combined, such as international marketing with administration. The responsibility for the North American market is split between the President and the Vice-President, Marketing, despite the overlap in the prospective client market. The President is involved in numerous areas of activity inconsistent with his Chief Executive role, such as the responsibility for financial management.

The role and responsibility of the President of MTX are unclear, particularly in relation to the role and responsibility of the Managing Director, and in relation to the company's 50% interest in Saudi Arabia Datacom Limited.

Given the dependency of MTX on the resources of MTS, there appears to be no logic in the way in which MTX was positioned as a highly autonomous subsidiary. The

Board of MTS had very little input or involvement with the activities of MTX despite the key inter-relationships between the companies.

Procedures are not in place to allow the MTX Board to exercise significant control over its Board and Management representatives in SADL.

4. Management Processes and Controls

A significant portion of MTX's mandate requires the ability to plan, organize and manage a variety of projects. There is no dedicated project planning or management expertise within MTX. MTX relies on MTS to provide project planning and management capability, but MTS does not have much of the expertise required for planning the types of projects undertaken by MTX.

The financial planning process has been part of the annual plan, and has not addressed questions of major capital requirements. These tend to have been dealt with at the Board level on an ad hoc basis. Very little analysis was available to show whether debt versus equity financing alternatives were considered for the company's projects.

Operating budgets were prepared on a basis which proved to have little relation to actual results, and the value of the budget as an operating tool was limited.

The process of providing for an additional investment of $2 million Cdn in Saudi Arabia in 1985 raises significant questions about the adequacy of the information provided to the MTS Board, the Minister, Crown Investments and ERIC relative to the profit and loss sharing arrangements in Saudi Arabia between MTX and Sheikh Al Bassam, the company's partner.

Throughout its history, the Company has been beset with accounting problems, including late financial reporting and a weak system of internal accounting controls.

5. Human Resources Management

Our review of the human resources management system revealed that there were difficulties in the recruitment and selection process, inconsistencies in compensation practices, and limitations in manpower planning and development.

6. Assessment of Management Personnel

Our examination has revealed serious deficiencies in management decision making and the organization and control of MTX and its various ventures. Senior executives responsible for MTS and MTX must accept ultimate responsibility for exposing the Corporation to significant business risk and financial losses. We have not been able to determine the full extent of the losses incurred. However, we expect they will be substantial and could be in the range of $20 to $25 million Cdn. Messrs. Gordon Holland, Glover Anderson and Maurice Provencher initiated these ventures and were responsible for their results since the start up of MTX in 1982. The organization, staffing and investment proposals were begun under their direction. The Boards of Directors of MTS and MTX relied upon them as the key management executives to exercise sound business judgment and to direct and control these ventures, as approved. Sound financial and management control was not established from the very start of operations. In addition, the Corporations' (MTX and MTS) assets were placed inappropriately at risk by the business and contractual arrangements utilized for these ventures. In particular, the structure and business arrangements for the CEZAR/INET venture showed poor business judgement. At various times, there was evidence of serious problems. These individuals failed to take appropriate corrective action and to adequately communicate these difficulties.

As President and Chief Operating Officer of MTX since 1984, Mr. Donald Plunkett has worked diligently to develop MTX and deal with its problems. However, the company has lacked adequate management resources and financial controls from its beginning. He has failed to deal with these critical needs. In addition, he initiated the venture with US SPRINT and CEZAR. Poor business judgement was displayed in the structuring and management of these activities. The organizational structure and management accountabilities within MTX remain inadequate. The losses and problems within MTX have been prolonged by his failure to take corrective action.

Mr. M.A. Aysan undertook the detailed field research and planning for the Saudi Arabia partnership with Sheikh Al Bassam. At the insistance of the Sheikh, he was appointed General Manager of SADL for three years after the start up of operations in 1982. He endeavoured to return to Canada in the mid-term of his appointment. However, he was persuaded to complete his term of appointment and proceeded to do so. He was hard-working in fulfilling his mandate. However, there is evidence of poor judgement in the content of business plans prepared for consideration by the Boards of SADL. These plans were not approved by the Board of Directors of MTS and MTX. The decision to shift the business of data communications to micro-computer products was inappropriate. The staffing of SADL was focused on providing technical resources rather than on marketing and selling capabilities. Many of the serious financing and business problems which have become evident in 1986 were initiated during Mr. Aysan's tenure as General Manager.

In summary, the company had inadequate management resources and leadership throughout the period from its start up of operations, in 1982, to date.

7. Conclusion

Many of the deficiencies which we identified are understandable in an immature organization in a start up mode, and particularly in a business environment which is distinctly different from the one in which the organization's management received their training.

However, the lack of an adequate strategic focus, i.e. "What business are we in?," the unstructured organizational arrangements, and the lack of adequate project planning and management information systems are critical weaknesses which should have been addressed. Furthermore, during its three-year history, as MTX evolved and major contracts were secured, the appropriate corrective measures were not put into place.

E. REVIEW OF HUMAN RIGHTS ISSUES

As part of our management audit, Mr. Peter A. Cumming, QC, Professor of Law, Osgoode Hall Law School of York University, reviewed MTS and MTX management performance in complying with the code of conduct for Manitoba Crown Corporations. Following is a summary of his report; his full opinion is presented as Volume VI of this audit.

The Manitoba Human Rights Act is the applicable legislation governing the activities of MTX in Manitoba. The Human Rights Act prohibits discrimination in respect of employment because of certain grounds, including those of race, nationality, religion, sex, political beliefs, and ethnic or national origin. MTX, in recruiting within Canada for placement in overseas positions, must, by law, follow a policy of non-discrimination on the basis of any of the prohibited grounds.

Every aspect in each stage of the employment process that takes place in Manitoba is subject to applicable Manitoba law, including the Human Rights Act. Thus, for example, the solicitation of applications for positions, the initial screening of applicants, interviewing by the selection committee and its recommendations, and the decision by management to offer a position to a specific person, must comply with the human rights law.

In Canada, there is a separation of church and state, and the law derives from the authority of the state's institutions, either as common law through the courts or as statute law by governments. In contrast, Saudi Arabian law is Islamic law which derives from the word of God as provided in the Qur'an, promulgated by the prophets, and is enforced as much by custom as by government. Much of the law is unwritten, few court decisions are recorded, and statutory law generally takes the form of proclamations issued by the King of Saudi Arabia and the ministers he appoints.

All foreign companies are subject to Saudi law with respect to their business operations in Saudi Arabia. Although there are many variations and subtleties which must be considered, in general, it can be stated that, from the perspective of Manitoba and Canadian human rights' norms and values, the application of Saudi regulations and customs, in some instances, discriminate in employment with respect to both women and Jews. That is, Saudi law and custom result in employment practices within Saudi Arabia that would be in breach of Manitoba human rights law, if the practices took place within Manitoba. Saudi Arabia requires a person to have a particular entry visa to be able to work in that country.

MTX must comply with Manitoba law in respect of its hiring practices and employment within Manitoba. MTX must comply with Saudi law within Saudi Arabia.

To comply with the laws of both Manitoba and Saudi Arabia, MTX must ignore any discriminatory Saudi laws or customs in hiring employees and make decisions simply on the merits. However, MTX can make its offer of employment conditional upon the prospective employee being able to obtain the necessary visa from Saudi Arabia. The application of Saudi law and customs in visa granting or denying is a decision solely of the Saudi Arabian embassy, although representations in support of visa requests can and should be made by Canadian employers, such as MTX. The Saudi Embassy is, of course, subject only to Saudi law for the decisions it makes and, moreover, has immunity from the application of Canadian laws.

If the above process is followed, MTX is complying with Manitoba human rights law and it is Saudi Arabia that is making any decisions which constitute discrimination in employment in terms of violating the norms and values exemplified by the Manitoba Human Rights Act.

A review of the records of MTS and MTX, and the history of this matter, together with interviews with the management of MTS and MTX, lead to the reasonable conclusion that neither MTS nor MTX have been in breach of the Manitoba Human Rights Act in respect of the recruitment to date of Manitoba-based persons to work for MTX in Saudi Arabia. There are not any known Jewish or female applicants to date for MTX positions in Saudi Arabia; however, the absence of these particular applicants does not seem to be due to any discriminatory practices on the part of MTS or MTX.

The MTS and MTX codes of business conduct do not directly address human rights issues or concerns. The codes of business conduct for Manitoba Crown Corporations doing business abroad should be amended to include:

- an express and visible statement as to the requirement of compliance with Manitoba and Canadian human rights laws; and

- a policy for corporate management and government to follow in respect of human rights matters which go beyond legal requirements, that is, that are of a moral/political nature. Compliance with laws should not in itself end the matter from the stand point of human rights considerations.

A Crown Corporation should make a judgement, on a costs/benefits basis, of the merits in carrying on business in a foreign country which has different human rights norms and values from those expressed in Manitoba and Canadian laws. Very few, if any, of Canada's trading partners have human rights standards that mirror those of Canada. It would be foolish from an economic stand point, and self defeating from a political and moral values perspective, to adopt a position that a Crown Corporation can never do business abroad when the host jurisdiction discriminates in ways that would be unlawful in Manitoba and Canada. On the other hand, the decision will certainly be made by government on occasion not to do business in foreign jurisdictions which do significant violence to Canadian standards of basic human rights. South Africa is a current example.

When the judgement is made by the management of a Crown Corporation, and is supported by government, to carry on business in a foreign jurisdiction that discriminates in respect of the entry of certain employees on a basis that would be unlawful in Manitoba, the Corporation should extend to any disadvantaged employees compensatory opportunities in the other areas of its operations in Manitoba or elsewhere abroad. Thus, in the case of MTS and MTX, should any foreign country deny an entry visa to a person recruited on his/her merit by MTS or MTX to assume a position in that country, and the denial of the visa appears to have been on a basis that would be unlawful discrimination in Manitoba, that person should be given preference by management in the next similar employment opportunity that becomes available within the operations of MTS or MTX in Manitoba or other foreign jurisdictions.

V. KEY BUSINESS ISSUES TO BE ADDRESSED BY MTS/MTX

The management audit has revealed a number of important issues and problems. These fall into two groups - corporate issues and problems, and specific problems related to the Corporation's current portfolio of projects.

A. CORPORATE ISSUES THAT MUST BE RESOLVED

1. MTX's Mission and Role Must Be Reassessed

MTX has reached a major turning point. Given its successes and failures, and recognizing that market place needs have changed since it was founded, an assessment and decision must be made concerning whether the public and MTS's interests would best be served if MTX were to:

- terminate its operations; or
- continue in business, but with a modified, focused mission; or
- terminate the projects which are not viable, while reorganizing and pursuing those projects which are viable or promising; or

- a combination of the above.

These options must be evaluated and a directional decision reached promptly. This will set the stage for other corporate moves which must be taken.

2. Reorganize MTX

MTX's redefined corporate mission will then determine the organizational arrangements that should be put in place. If the decision is to continue MTX and/or to pursue selected projects, an appropriate management team and management controls must be put in place promptly. The resources and support systems to be selected, of course, depend upon MTX's mission and focus.

B. ACTIONS REQUIRED CONCERNING THE COMPANY'S CURRENT PORTFOLIO OF PROJECTS

MTS/MTX should implement the measures necessary to:

a. terminate or minimize MTX's losses on the projects or contracts which are not viable; and

b. reinforce and manage properly those contracts which are viable or offer promise.

To achieve this, MTS/MTX must undertake the following activities without delay:

- For SADL

MTS/MTX should undertake prompt discussions with the Saudi Arabian partner to confirm the potential and ultimate viability of this project, as well as his expectations.

If the discussions indicate that this project can be retrieved in whole or in part, then restructure and reinforce the organization and financial controls, as appropriate, consistent with the longer term objective of eventual withdrawal by MTX.

If the conclusion is that the project is no longer viable, then promptly implement measures to minimize the losses, sell or dispose of any recoverable assets, and withdraw.

- For US SPRINT

This project offers a degree of promise for the future. However, immediate measures must be taken to:

- Conclude the definition of the scope of this project, MTX's role therein, the contractual arrangements between the parties involved, and the expected costs and contract amounts.

- Reinforce the project management team and the project management practices to ensure that the project will be successful.

- Ensure that the project reporting arrangements within MTS/MTX are clear and that management remains informed concerning the status and progress of this project.

- Confirm the market potential, target markets, and marketing arrangements, i.e., should MTX act as prime marketing partner or should prime responsibility be transferred to others.

These measures must be implemented at once since a project failure or inadequate marketing arrangements will lead to further costs and possible loss of reputation by MTX.

- For CEZAR

  This contract offers some future potential and warrants support. However, because the ultimate potential remains uncertain, the support and additional investment required must be staged and well managed to avoid "throwing good money after bad". To achieve this, MTS/MTX should:

  - Confirm their strategic orientation and expectations for the ACT and LINE-1 technologies.

  - Redefine the working arrangements with CIL and the marketing organizations for each of these technologies.

  - Ensure that the required management team and marketing capability are in place within INET, MTS/MTX, and the U.S. marketing agency.

  - Ensure that progress is closely monitored.

  - Adjust or correct promptly, if appropriate.

- For MTX Management

  Immediate measures must be taken to put effective management personnel and controls in place within MTX. The individuals and controls selected will depend upon MTX's future orientation, i.e., should its focus be on stewardship through a wind-down, or transition, or towards establishing the ongoing practices and team required to carry on with selected projects.

VI. RECOMMENDATIONS AND FORWARD PLAN

We recommend that a Board and/or individual be assigned to direct implementation of the above noted recommendations and provide stewardship through the period of transition and reorientation.

The short-term measures related to specific contracts should be implemented immediately.

Development of the broader strategic orientation for MTX requires further assessment and discussion in order to select the course of action which will best serve the public interests while recognizing the business realities for both MTS/MTX and the market place.

At this time it appears that MTX should be reoriented to focus on:

- successfully completing the current contracts which hold promise;

- marketing only technologies or services that it can manage efficiently; and
- concentrating on parts of the world where they can do business profitably and effectively, without breaching any corporate or government policies.

It should be noted that exposing the strategic deliberations to competitors or the public before they are finalized might compromise MTS/MTX and preclude their implementation. It is imperative that confidentiality be retained throughout the strategy formulation stages.

VII. CONCLUSION

The Manitoba Government's concerns over MTX are valid. This review has identified corrective measures that should be taken; we recommend that they be taken without delay.

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Volume

2

MANAGEMENT AUDIT OF MTX

VOLUME II - REVIEW OF THE CEZAR PROJECT

November 12, 1986

Submitted to: MTX MANAGEMENT AUDIT STEERING COMMITTEE

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A. STUDY OBJECTIVES

The objective of this review of the MTX business relationship with Cezar Industries Limited (CIL) is to assess the relative attractiveness of the ACT and LINE-1 technologies. Additional objectives include:

- analysis of the contractual and financial commitments with CIL and International Networking (INET), the joint CIL and MTX subsidiary;
- Assessment of the relative strengths and weaknesses of the senior management staff;
- Discussions with current users;
- Assessment of the prospects for completing the technology and requirements for effective marketing;
- Assessment of the overall attractiveness of the venture as an investment by MTX.

Our report presents a number of strategic options consistent with the final objective which was to determine whether to continue this investment, and to evaluate the additional resources, management organization and controls required.

B. BACKGROUND AND FINANCIAL COMMITMENTS

Commencing in late 1983, MTX and MTS began discussions with Mr. Robert Cezar concerning certain hardware and software which Cezar Industries Ltd. (CIL), a California based company incorporated in Delaware, was developing. In June, 1985, a proposal was presented to the Policy and Strategy Committee of MTS recommending a business arrangement between CIL and MTS in which MTS would get worldwide technology rights to ACT-II and participate in joint product refinement of ACT-II at a total cost of $500,000 U.S. Subsequently, on July 5, 1985, the MTS Executive Committee approved negotiations with CIL, subject to a successful marketing/technology trial and approval of the MTS Board. CIL rejected this proposal and MTX then expressed interest in both the ACT products and LINE-1 as service offerings outside Manitoba.

With the approval of both the MTS and MTX Boards, a document dated October 9, 1985, was presented to the Economic Resource Investment Committee (ERIC) of the Manitoba Provincial Government, requesting approval to purchase worldwide marketing, manufacturing and technology rights for the ACT product line as well as 20% of INET Ltd., a subsidiary of CIL that had been established to manufacture and market the LINE-1 product. ERIC approved this purchase at $2.5 million U.S. based on an expected 18 month payback. In addition to the revenue potential, Manitoba expected to include employment creation.

On November 27, 1985, CIL and MTX signed a document concluding the agreement. Essentially, for a total investment of $2.5 million U.S. MTX had acquired 20% of INET, together with the right to the technology and worldwide distribution rights for ACT, and non-exclusive distribution rights for the LINE-1 technology for Canada.

Thus far, INET, the joint MTX/CIL subsidiary, has not met expectations for LINE-1 sales or profits. The failure of INET to meet these expectations can be attributed to problems with the intended distributor, PARA Group Inc., although other difficulties arose including delays in obtaining FCC/DOC approval.

The original decision making process had some important shortcomings. PARA Group Inc., with only six employees, would seem an unlikely candidate to launch a major new service in 50 American cities, as was planned. While the $500,000 U.S. investment in ACT gave MTX the rights to the technology and worldwide distribution rights, the $2,000,000 U.S. invested in INET and LINE-1 was not as far-reaching. MTX obtained only 20% equity in a company which had no assets other than the LINE-1 technology rights. They subsequently obtained non-exclusive distribution rights for Canada. Cezar Industries Limited (CIL), the other shareholder, obtained 80% of INET in exchange for the transfer of the technology to the subsidiary; these transactions put CIL in a profitable position after three years of operating losses. Given CIL's financial position, and the relative strength of MTX both financially and, presumably, technically, to develop a similar product if it so chose, MTX was well positioned to demand a much larger share in INET than 20%. An objective of obtaining controlling interest in INET would have been realistic.

The contractual obligations of INET are set down in a security agreement with MTX. The agreement gives MTX an interest in INET assets as a guarantee of INET's performance. This security interest can be subordinated to any commercial lender by the INET Board of Directors. While the security agreement expires on November 27, 1986, MTX management has not identified any failure on INET's part which would be covered under the agreement. Existing INET assets included $1,109,170 U.S. in cash remaining from the MTX investment at the end of August, 1986. MTX may also have contractual obligations to Dynamic Interconnect Montreal (DIM) with whom they had a distribution agreement for ACT. Both INET and MTX should take steps to protect themselves under these agreements since these distributors may be in a position to seek compensation if the products are successfully distributed through other channels at a future date.

C. RELATIVE ATTRACTIVENESS OF THE TECHNOLOGIES

The MTX/Cezar business relationship revolves around products referred to as ACT-I, ACT-II and LINE-1. ACT-I is a computer product which helps a receptionist keep track of personnel. ACT-II is a more sophisticated product which allows employees to update their status on the receptionist's computer from any location, and use all the features of the PBX such as WATS lines. They can also do other things including remotely program the system to forward their calls to wherever they are. LINE-1 is similar to ACT-II but it is a subscription service; users do not need to have their own PBX. The products also provide various degrees of telephone usage/management reporting. All products including ACT-I, ACT-II and LINE-1 are successfully operational at present.

The risk of market failure with the ACT products is relatively high compared to LINE-1. MTX has worldwide distribution rights, but has no track record in product sales of this type, nor established distribution channels. Given current forecasts, the best MTX can expect to accomplish in the U.S. is to recoup its investment in the ACT technology. At worst, MTX could incur substantial losses in attempting to penetrate the U.S. market.

We believe there is a greater probability of market success with LINE-1. It is a subscription service which at the current price of $19.50 U.S. per month presents less of a market barrier. ACT is sold outright and is dependent on customers having specific hardware (PBX and a personal computer) in place. Discussions with five of the fifteen paying subscribers on the Sunnyvale LINE-1 system on October 8, 1986, indicated a high degree of satisfaction with the service. However, because the system is unique and somewhat complex, there are challenges in terms of the way it is presented and promoted in the market place, and in user-training and/or improved or simplified human interface.

D. CORPORATE BACKGROUND AND CAPABILITY

Cezar Industries Ltd. is headed by Mr. Robert Cezar, as President, Chief Executive Officer and Chairman. He is originally from Montreal and was the Director of Engineering during the launch of CITY-TV in Toronto. He tried to rescue the multi-lingual Toronto station in 1982-83. One of his most celebrated ventures was the attempted take-over of Quebecair in

1982. Although he has no formal university engineering training, he appears technically competent having been personally responsible for the development of the ACT and LINE-1 products. He also described his business negotiating skills as one of his major strengths. The company was formerly a distributor of video tape records, but is now focusing most of its efforts on LINE-1. CIL incurred losses from 1983 through to 1985. A profit was achieved in 1986, due to the MTX business relationship.

Mr. Don Plunkett (President of MTX) is the MTX appointee to the INET Board and is the Chairman. Mr. Barry Gordon, an MTS Vice President is also on the Board and is a CIL appointee. The remaining two INET directors are also on the Board of CIL. INET has no full-time employees. Resources for the Sunnyvale LINE-1 marketing effort are contracted from CIL and paid for by INET or MTX. Operating expenses are about $25,000 U.S. per month. Subscriber revenues to date have been negligible.

Mr. Cezar is aware of the limited ability of a small company like CIL/INET to successfully market LINE-1. He has assigned the immediate marketing responsibilities to his brother, Mr. Lorne Cezar, to launch the service in Sunnyvale and to attract potential distributors. The ultimate aim is to attract a large marketing organization, such as one of the U.S. Bell operating companies, to market this product. At the same time, additional R&D is under way to develop a subsequent LINE-1 type of technology.

MTX has focused its efforts on technical improvements of the ACT product. Marketing efforts have been sporadic and not very successful. Little marketing effort has been made for LINE-1, although a limited technical trial has been launched. Recognizing a need for marketing resources, an individual has been hired to sell the ACT product. This individual expected to have a sales function, but did not have the necessary marketing support, e.g., marketing strategies, promotional materials, pricing, etc. in place. Limited market assessment of the ACT and LINE-1 technologies was conducted prior to the arrangements being negotiated with Cezar. The poorly developed marketing capability and lack of direction of current marketing resources appear to be weaknesses. It is doubtful whether MTX currently has the marketing expertise or the necessary resources to market any of the products. A market research study was contracted out to Susan Loren, a U.S. marketing research firm. This provided some direction, but resulting forecasts are not promising.

The distribution organizations which were identified to market the LINE-1 product in the U.S. do not have the necessary capabilities. The agreement between MTX and Cezar was contingent on an agreement being signed with PARA Group Inc. PARA was to launch the service in fifty U.S. cities within one year. A small firm with six employees, PARA was, in turn, dependent on Telamarketing Inc. to do the actual retail sales. Telamarketing has since gone out of business. While in business, the firm apparently devoted its energies to cellular telephone products rather than to LINE-1.

E. COMPETITIVE SERVICES AND TECHNOLOGIES

The Susan Loren market analysis report identifies five companies which market products that functionally overlap with ACT-I. All but one supplier has fewer than fifteen employees. The largest, STAR Technologies Inc., has 100 employees, but its major line of business is computer and related equipment manufacturing. Another system which has some similarity to ACT-II, including telephone/management reporting, authorization codes and speed dialing, is produced by OPTIMUM Communications of Sunnyvale, California, called the Opcom XL 150. Data Pro reports that 95 of these systems have been installed. The system is sold by AT&T for $13,000 U.S. compared to $3,500 U.S. for ACT-II.

With respect to LINE-1, there are few similar services currently available. Bell Canada does offer non-remote CENTREX-based call forwarding. AT&T's ISDN network, when complete, will include a service called Access 7 which will be similar to LINE-1. ISDN will handle voice and data at very high speeds and will include a supervisory channel which enables the cost of a call to be accurately calculated by the accounting system of the calling equipment.

F. KEY BUSINESS ISSUES

Substantial financial and human resources have been invested by MTX/MTS in the CEZAR project. By now, at least $4,000,000 Cdn. had been invested, including acquisition of INET, purchase of ACT technology and R&D development effort.

Technical problems do not appear to threaten the further development of ACT and LINE-1 technologies. However, further improvements are required and cheaper alternate technologies may emerge within a few years.

The market for ACT is very limited, according to our review. The potential for LINE-1 is more attractive. Virtually, no marketing capabilities exist within the above mentioned companies to launch these technologies across North America.

Further investment is required by MTX to continue its involvement in the project. If MTX does nothing or terminates the project, MTX could lose all its current investment of about $4,000,000 Cdn.

G. STRATEGIC RECOMMENDATIONS

MTX's choices appears to be to terminate its involvement with ACT and LINE-1 or to support them in whole or in part. If, for corporate or other reasons, MTX chooses to withdraw from the CEZAR venture, the chances of any substantial recovery of the investment by terminating involvement with CIL/INET are negligible.

Marketing the ACT products is a relatively high-risk venture compared to LINE-1. The strategy most likely to meet the goals of MTX and MTS is the support of INET's LINE-1 sales and the marketing of LINE-1 by MTX in Canada. A number of key moves associated with this strategy are outlined.

Proceed with a market trial with MTS. A well-executed trial will provide essential market information and support INET's efforts. A first step should be to conduct a study of the market potential including the identification of different types of users, target organizations, etc. In conjunction with this research, a business plan should be developed for marketing LINE-1 in Canada.

Secure exclusive distribution rights for Canada. A target for this agreement should not be more than 15% of gross revenue for royalty payments and hardware leasing/manufacturing. MTS/MTX could recover its initial $2,000,000 U.S. investment in five years with an average of between 5 and 10 thousand subscribers paying $29.50/month.

Negotiate a return of the ACT technology to INET or some third party. Other alternatives might be to arrange a distribution agreement with a major distributor who could provide all product support. MTX would restrict itself to product R&D.

If the market plan is successful, finalize the business plan and secure the necessary financing for a full scale launch. At the same time, joint ventures, e.g., with other members of Telecom Canada, would be pursued for a national launch.

Overall, this strategy is oriented towards cautious, phased support of the investment. It requires a close alignment of MTX with MTS. Management of the project should be assigned to an individual with a proven track record in managing a market trial and launching a new telecommunications service. We would suggest that the current MTX resources be re-assigned to the LINE-1 project. Additional MTS resources will, of course, be required. MTX should assign one individual the responsibility of concluding an arrangement for the disposal of the ACT technology.

II. TECHNICAL ASPECTS OF THE ACT AND LINE-1 PRODUCTS

The Cezar Industries Limited business arrangements revolve around products which provide added telephone functionality, including various degrees of assisted or enhanced call forwarding and associated centralized telephone management capabilities. These products are referred to in most documentation as ACT-I, ACT-II and LINE-1. The specific functions performed by these products are described in more detail below.

A. ACT-I

The ACT-I system, recently re-named Telefficient-I, is a personal computer product designed for use by call attendants and company personnel to improve their telephone communications. The ACT-I system is designed to reduce telephone tag and permits the correct routing of telephone calls more quickly. The product consists of a printed circuit board that plugs into an IBM PC or compatible microcomputer, and related software. The system has three major functions:

- The system provides the call attendant/receptionist with information on personnel whereabouts, including whether or not a specific employee is in the office, where and how the person can be reached, expected return time and identification of any alternate person available to take call.

- The system allows the receptionist to record messages on the personal computer, route calls as per directions from personnel, perform some job costing functions and do other tasks on the computer such as word processing while the ACT-I system is operating.

- The third major feature is that it allows individuals to use any touch tone phone to alter their status on the receptionist's screen automatically without the need for verbal communication. It also allows users to log time spent on specific projects or for specific clients.

B. ACT-II

The ACT-II product, recently renamed Telefficient-II, is an enhancement of the ACT-I product. For larger customers, a separate card cage (box) is required. It includes all the ACT-I features, but is also interfaced directly to the PBX so that it can conduct a number of telephone functions directly without involvement of the receptionist. Users are assigned a Personal Identification Number (PIN) which acts as a password and which must be input by the user before any of the ACT-II features can be re-programmed. These additional features include:

* Direct In-Dial: The system automatically directs incoming calls to the individual being called, by-passing the receptionist, provided the caller knows the user's four digit locator code and inputs it at the appropriate time (in 2 seconds following a "bing bong"). If the caller does not know the code the call defaults to the attendant.

* Enhanced call-forwarding: Depending on the PBX, users can remotely instruct the system to forward their calls to wherever they happen to be. Some PBX's do not have an external to external call transfer capability and would only be capable of transferring external calls within the building. The system can be instructed to forward calls from any touch-tone telephone.

* Call detail recording: The system provides a record, including some details of telephone usage by individual user. Complete call detail recording requires the ability to time the duration of calls and there is some question as to whether this capability will be included.

- Long distance restrictions: Access to long distance can be restricted according to area, group or individual.

- Direct-In-System Access: Allows personnel to call in to the PBX from any outside number and use all PBX features, i.e., call from out of town and use the WATS line. This capability can produce a number of cost savings to the user.

C. LINE-1

The LINE-1 product is similar to ACT-II in many respects and, again, requires the use of PIN codes by the user and locator codes by the caller. LINE-1 is a subscription service, however, somewhat like basic telephone service, which does not require the sale of hardware to subscribers. The service must be provided by retailers such as service bureaus or the telephone companies. Currently, International Networking (INET) which is 20% owned by MTX, is running its own service bureau in Sunnyvale, California. Future plans call for INET (and MTX in Canada) to sell the hardware and lease the software to retail organizations which would then provide the service to subscribers. The service is the only thing provided to subscribers; they do not purchase any hardware or software. The hardware (ETL-1 card cages) and LINE-1 software are located on the retailer's premises and are integrated into the telephone company's switch (exchange) rather than into a PBX.

Because there is no PBX involved, the functions are somewhat different from those provided by ACT-II. For example, there is no Direct-In-System Access of a PBX.

The features provided by LINE-1 include:

- Enhanced call-forwarding: This is the same remote call forwarding capability provided by ACT-II without the limitations imposed by some PBX's (e.g. no external-to-external call transfer capability).

* Secondary call-forwarding: If the user's line is busy, or there is no answer, calls are automatically forwarded to a second call forwarding number.

* Delayed call forwarding: Users can specify where they will be in up to 99 minutes and calls are forwarded to that location. Any changes in the call forwarding number after setting up delayed call forwarding will cancel the delay feature.

* Speed dialing: Up to nine telephone numbers are stored and can be dialed with a one digit number. The last call dialed is always saved as Speed Code digit one (1).

* Call transfer: Calls can be transferred to another user's primary or secondary telephone number, provided the other user is on the same LINE-1 service. Callers can also be transferred to the subscriber's secondary phone number.

* Multiple (back-to-back) calling. Users can make multiple calls to the area serviced by a LINE-1 hub without hanging up. For long distance or coin calls, this can produce savings as users need to obtain credit card authorizations or deposit coins once only.

* Call detail recording: LINE-1 provides a detailed record of telephone use by PIN and can "roll-up" reports for departments or organizations.

* Long distance restrictions: As with ACT-II, access to long distance can be restricted according to area, group or individual.

* Call screening: By providing different locator codes to callers, users can effectively screen calls.

FIGURE 1.1

PRODUCT DIFFERENTIATION OVERVIEW

CHARACTERISTICS	ACT-I	ACT-II	LINE-1
MAJOR FUNCTIONS	Receptionist assistance by keeping track of personnel	Receptionist assistance plus enhanced call forwarding plus a form of direct-in-dialing	Enhanced call forwarding, remote call transfer, call detail recording
MAJOR BENEFITS	Office efficiency	Office efficiency, improved accessibility of users and cost savings	Improved accessibility of LINE-1 subscribers and cost savings
CUSTOMERS	Distributors and then user organizations	Distributors and then user organizations	Distributors and then user organizations or individuals
UNIQUE HARDWARE	P.C. Board	ETL 1 Card Cages	ETL 1 Card Cages
TARGET SWITCH	Smaller PBX's and key sets	PBX's with at least 3 way calling and larger PBX's	Telephone Co. Centrex
PURCHASE/SUBSCRIPTION	Purchase	Purchase	Subscription
RETAIL PRICE RANGE	$1,295.00	Version 2.2; $5.000.00 Version 2.1; $3.495.00	US $19.50/month (now) US $29.50/month (Nov/86)
WHOLESALE PRICE RANGE	$810.00 (QTY 10 or more)	Version 2.2; $3,125.00 Version 2.1; $2,190.00 (QTY 10 or more)	20% of subscriber revenue plus US $21.00 per board per month
EXPECTED PRODUCT COSTS TO MTX	$500.00	Version 2.2; to be determined Version 2.1; $ $2,370.00	$158.00 average per I.D. number (PIN)
MTX DISTRIBUTION RIGHTS	World-wide	World-wide	Canada

Note: All dollar figures are Canadian except where otherwise noted.

- Reverse Control: After a caller hangs up, the LINE-1 subscriber can gain control of the system by entering his or her Personal Identification Number. This can result in savings because additional credit card and/or hotel surcharges can be eliminated.

Some of the major characteristics which differentiate ACT-I, ACT-II and LINE-1 are shown in Figure 1.1.

D. SUMMARY OF TECHNICAL STATUS AND PRODUCT INTRODUCTION

The table below summarizes the ACT-I, ACT-II, and LINE-1 products. Each section of the table is discussed in more detail in the text which follows Figure 2.1. Product Status Summary.

FIGURE 2.1
PRODUCT STATUS SUMMARY

	ACT-I	ACT-II	LINE-1
1. General Information			
Date Announced	* Sept/85	* March/86	* March/86
First Installed	* Sept/85	* March/86	* May/86
No. Systems Installed	15	1	1
2. Features			
* Call Forwarding & Direct-in Dialing	* To record current phone numbers of subscribers	* To forward calls to user automatically	* To forward calls to user automatically
* Extended Features	* No	* Performs some new features	* Performs several new features
* Management Services	* No	* Performs some services such as long distance tracking and selected access	* Performs services such as long distance tracking and timing, and selected access

	ACT-I	ACT-II	LINE-1
3. Development Status			
a) Equipment			
* Mitel	* Development completed	* Same as ACT-I	* Configured for service bureau use
* Northern Telecom	* Tested	* Tested - completed	* Development completed
* AT&T	* Tested	* Tested	* Development completed
b) Research & Development Plans	* None	* To reduce size to fit inside IBM-PC * To provide features as in LINE-1	* None at MTX
4. Capacity			
All features - No. of users	96	73	73
- No. of cards required	2	16	16
Some features only			
- No. of users	N/A	96	N/A
- No. of cards	N/A	7	N/A
5. Approval			
First submission	* June/86	* same as ACT-I	* same as ACT-I
Problems found	* Impedance, lightning test		
Problems resolved/resubmitted	* Yes		
Results expected	* Oct/86		

	ACT-I	ACT-II	LINE-1
6. Manufacturing			
In California	yes	yes	yes
Quotes received for Manitoba	yes	yes	* not planned
Prototype produced in Manitoba	no	no	* not planned
Production in Manitoba	no	no	* not planned
7. Price & Cost of Equipment			
a) Excluding IBM-PC			
* Price	$1,295	$3,495	U.S.$19.50/user per month
* Cost from CIL	$1,280	$5,866	$11,626
* Cost from MTX	$500	$2,370	Not planned
b) Including IBM-PC			
* Price	$3,295	$7,495	* no IBM-PC required

1. General Information

ACT-I was announced and ready for sale in September, 1985. To date, fifteen systems have been sold. Ten systems were sold in France and five in Quebec. The business plan forecast sales of at least twenty systems per month. Clearly, the product has sold below expectations.

ACT-II has only recently been through its Beta-test. ACT-II was first installed in March, 1986, at an interconnect firm in Montreal. Problems with the ACT-II product were resolved by June, and the company accepted the equipment. This unit, however, is the only one installed.

FIGURE 2.2

COMPARISON OF ACT-I, ACT-II, LINE-1 CENTREX and PABX Features

		ACT-I	ACT-II	LINE-1	CENTREX+	PABX+
1.	Advanced Call Forwarding	By ATTENDANT				
	* Call forwarding		Yes	Yes	Yes	Yes
	* Remote call forwarding		Yes	Yes	Some	No
	* Call re-route - no answer		Yes	Yes	Yes	Yes
	* Call screening		Yes	Yes	No	No
2.	Extended Features					
	* Direct-in dialing	No	Yes	Yes	Yes	Some
	* Call waiting	No*	No*	No*	Yes	Yes
	* Call conferencing	No*	No*	No*	Yes	Yes
	* Serial calling	No	No**	Yes	No	No
	* Message indicator	No*	Yes	Yes	Yes	Yes
	* Speed calling	No*	No**	Yes	Yes	Yes
	* Line inversion	No*	No**	Yes	Yes	Yes
3.	Management Services					
	* Call tracking	No	Yes	Yes	No	Some
	* Call duration tracking	No	No**	Yes	No	Some
	* Security code	No	Yes	Yes	No	No
	* Call reporting	No	Yes	Yes	No	Some
	* Job activity log	Yes	Yes	Yes	No	No

* Service would be provided by the PABX or Centrex.

** Services could be provided but with loss of capacity. Software under development.

+ Typical

LINE-1 is being sold in the United States. Six companies have purchased the service. A total of twenty-four users belonging to these companies are being serviced by one system. Each system has a maximum capacity of seventy-three users (although capacity depends upon the level of user traffic and specific user configurations). This product has also sold below expectations.

2. Features

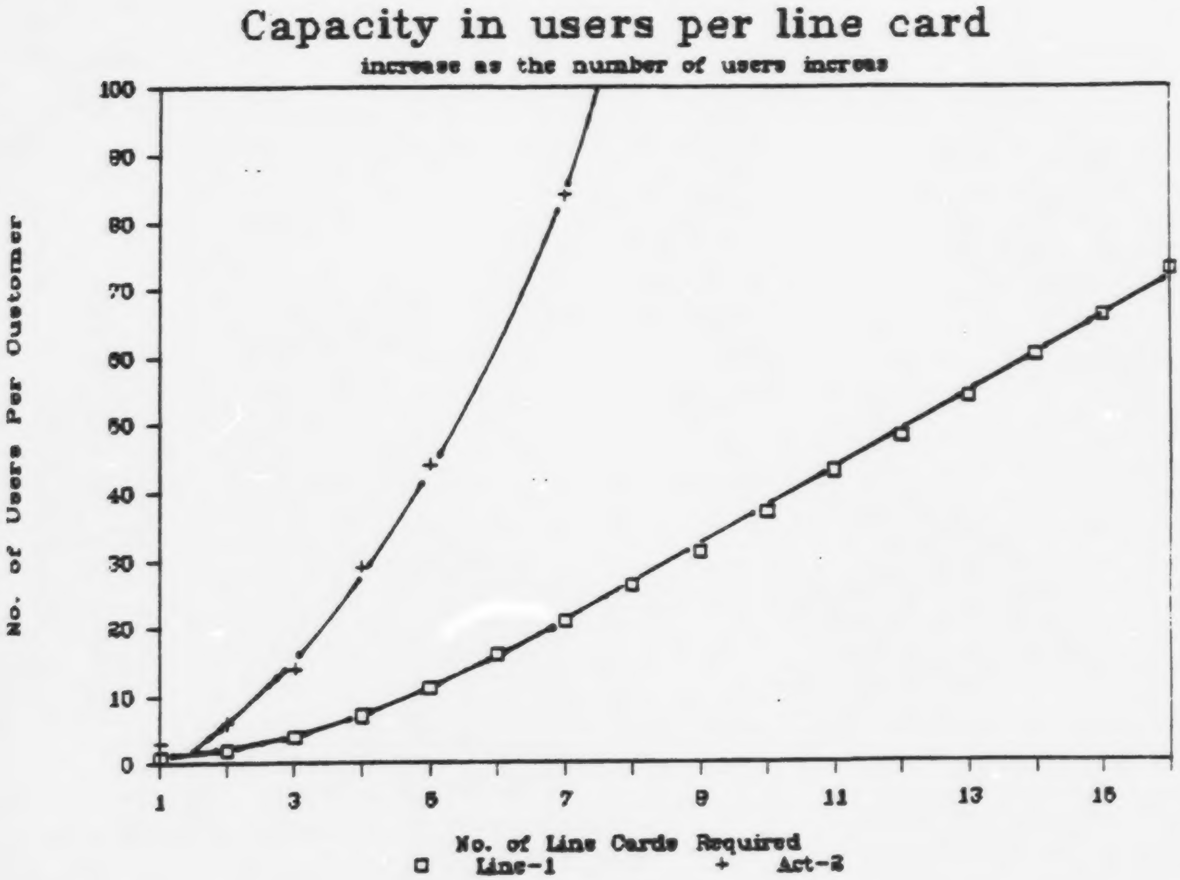
A comparison of the features offered by ACT-I, ACT-II, LINE-1, CENTREX, and PABX is shown in Figure 2.2. ACT-I's main function is to provide the attendant with information such as the current extension number of an individual or messages. This can, however, be done using pen and pencil. ACT-I does not allow the user to bypass the attendant. The other service provided by ACT-I is job activity log. Using this feature, a person can enter the time he/she spends on a project. At the end of the week, the detail of all entries is printed. This feature was responsible for the sale of five systems in Quebec.

LINE-1 and ACT-II provide services not available on CENTREX and PABX. Furthermore, LINE-1 is able to provide a more extensive feature set than ACT-II because it retains the telephone line until the call ends. There is software being developed to allow ACT-II to provide these services as well.

3. Development Status

ACT-I and ACT-II have been tested and installed on Mitel equipment. Even though testing has been completed successfully at Northern Telecom and AT&T, no sites have been installed. LINE-1 has been tested on CENTREX service.

FIGURE 2.3


Capacity in users per line card
increase as the number of users increas
No. of Users Per Customer
100
90
80
70
60
50
40
30
20
10
0
1
3
5
7
9
11
13
15
No. of Line Cards Required
□ Line-1
+ Act-2

Research and development for ACT-II is taking place in two areas:

- The line cards are to be installed inside the IBM-PC itself. The line cards are to be redesigned to allow two telephone lines to be connected to each. The IBM-PC is to contain three cards, giving the system the capacity of an ACT-II system with six lines. The card cage, power supply and control board would not be required. A prototype has been built. Software is now being developed.

- The software of ACT-II is being modified to allow the system to remain connected to a telephone line after the connection is made between the caller and the individual being called. This will allow the product to provide all the features of LINE-1 (See Table 2 for a list of features).

When these developments began, the marketing function had not specifically determined whether these changes would increase the attractiveness of the equipment. Section E: Research & Development Programs and Controls, discusses what developments have taken place and how they were initiated and controlled.

4. Capacity related to the size of customer subscription

Each line circuit appears to a PABX as a telephone line with a unique telephone number. A PABX can be equipped with a rotary hunt which directs an incoming phone call to the next available line circuit. The larger the number of line circuits installed, the more opportunities for the rotary hunt to find an available line circuit. The theory of telephone traffic shows that a doubling of the number of line cards more than doubles the capacity of the equipment.

Figure 2.3 shows the relationship between number of users and line cards required to serve them (based on p.01 standards). The graph shows that when a LINE-1 customer subscribes to one line card (one telephone line), it provides good service at reasonable blocking for only one user. The capacity is, therefore, 1 user/line card. If a second customer subscribes to eight line cards, up to twenty-four users can be given access for the same level of service. The capacity is, therefore, 3 users/linecard. On a per user basis, the cost of providing the service to the first customer is three times higher than the cost to the second customer. This has the following implications:

1. It questions the LINE-1 marketing decision to price the service on a per user basis. For small subscribers, the per user cost is much higher than for large subscribers.

2. Sales should be targeted to larger subscribers rather than small. As was discussed above, the cost of a one line card service is three times higher than the cost of an eight line card service (per user).

Figure 2.2 also shows that ACT-II requires substantially fewer line cards to provide the same quality of service as LINE-1. The reason is that, after the connection between the caller and the individual being called is made, ACT-II drops the line, whereas LINE-1 retains it until the call ends. This feature allows LINE-1 to offer more services than ACT-II such as long distance call timing, redial, serial calling, and line inversion. LINE-1 is, therefore, capable of providing more features, but at higher cost.

5. FCC and DOC Approval

Since the products ACT-I, ACT-II, and LINE-1 are very similar, only one product (ACT-I) was submitted to obtain approval for network attachment. It is believed that, when one is approved, subsequent approvals will be almost automatically granted. The equipment was submitted to a testing laboratory in Ottawa which can recommend products for approval to the FCC and DOC simultaneously.

The first submission took place in June, 1986. Two problems were found and the hardware had to be modified. The modifications were made and the line cards resubmitted. After the tests were completed, the testing laboratory asked for one more test. The hardware for this test left MTX for Ottawa during September, 1986. Results are expected in October or November, 1986. After the ACT-I line circuit is approved, ACT-II and LINE-1 will be submitted.

6. Manufacturing

ACT-I, ACT-II, and LINE-1 are currently being manufactured in California. When MTX needs equipment, it sends a request to CIL to place an order. CIL places the order with a manufacturer in California. When the product is received by CIL, it is sent to MTX. At this time, MTX has in its possession nine ACT-II systems assembled and tested, and twenty-five ACT-I systems.

In the future, the ACT products are to be assembled in Manitoba. Quotes have already been submitted by several companies. Three of these quotes have been discussed with the potential producers. The quotes are priced at or below the California prices.

7. Price and Cost of Equipment

MTX's prospective suggested selling price of the equipment to the end-user is as follows:

	ACT-I	**ACT-II**	**LINE-1**
Equipment	$1,295	$3,495	$19.50 per user per month
Plus IBM-PC (approximate)	$2,000	$2,000	-
	$3,295	$5,495	

The breakdown of the estimated cost of the equipment is as follows:

	ACT-I		ACT-II		LINE-1	
	Qty	$	Qty	$	Qty	$
Manufacturing in Manitoba (expected)						
Line cards	2	500	7	1,750	16	not
Card cage	-	-	1	620	1	planned
Plus IBM-PC	1	2,000	1	2,000	-	
		2,500		4,370		
Purchasing through CIL						
Line cards	2	1,280	7	4,480	16	10,240
Card cage	-	-	1	1,386	1	1,386
Plus IBM-PC	1	2,000	1	2,000	-	-
		3,280		7,866		11,626

The tables show the following:

- Purchasing through CIL makes the sale of any of the ACT products unprofitable. Markups by CIL are higher than 100%.

- To be profitable, the ACT hardware must be manufactured by MTX (or a subcontractor). To date, only quotes have been received from manufacturers. It may take many months before MTX can produce in Winnipeg. Until then, it has the choice of either selling at a loss products bought from CIL, deferring the sales effort until manufacturing is in place, or revising its pricing policies especially as wholesale prices for ACT-II exceed even Manitoba costs.

E. RESEARCH AND DEVELOPMENT PROGRAMS AND COST

In November, 1985, MTX bought the rights to the ACT technology. The following documents for ACT-I and ACT-II were delivered: drawings, schematics, masks for circuit packs, and source code listing. The source code listing is said to be self documenting. Additional documentation will eventually be needed.

The ACT-I product has not been modified; however, ACT-II development began in January, 1986, and major changes have since taken place. The number of lines of code originally delivered by CIL were 10,000. To date, 2,000 have been modified and 3,750 added. Furthermore, changes in hardware initiated by MTX were made by CIL.

A team from MTX was created to carry out development. The members of the development team complement each other well. The software development is being conducted by a programmer with mainframe experience and a person with PC experience. The two other members of the team are a PABX standards hardware specialist and an equipment specialist.

1. Development

The development began due to deficiencies in the software which performs call processing logic. Specifically, the problem involved the many conditions under which audio signals change on the line during call progress. The development took longer than anticipated. The project was due to be completed by March or April, 1986, but it was finished in June. The original budget for $100,000 was exceeded by approximately 50%.

The development adapted ACT-II for operation with a Mitel switch. Another product of this work was to allow the IBM-PC to operate the ACT-II system as a background job. With ACT-II in the background, the attendant can use the IBM-PC to work on other tasks such as word processing or LOTUS while calls are being processed.

2. Controls on Research and Development

It is clear that Research and Development at MTX should not be controlled through a complex reporting structure. Some controls, however, need to be applied before the start of a project. A study by marketing should always be carried out to predict the benefits of a development program in terms of increased sales or improved margins. These benefits must then justify the development costs.

A project to reduce the size and cost of the ACT-II unit was recently started. This project was undertaken without a study (business plan or business case) being prepared. The marketing benefits of the project were not investigated. Business planning procedures must be implemented to give the R&D team a marketing focus.

3. Development Plans

There are several development projects in progress:

a) Verification on other PABXs is currently taking place. The compatibility of ACT-II with other PABXs will be tested.

b) Call disposition reporting will be implemented on ACT-II. This is a feature which requires that the line card remain on the line throughout the call. When the software is developed, ACT-II will be able to provide all the services now provided by LINE-1 (such as long distance timing, speed dial, and line inversion).

c) Class of service will be added to the product. ACT-II will be able to choose the most cost effective line for a long distance call.

d) The range of personal computers which can be used with the equipment will be broadened.

e) A smaller version of ACT-II will be designed to fit inside an IBM-PC. The card cage, power supply and control card will not be required. The objective is to reduce the cost of the equipment.

The development cost for these projects has been estimated by MTX at $100,000.

III. OVERVIEW OF THE MTX/CEZAR BUSINESS RELATIONSHIP

A. MTX OBJECTIVES

MTX is a wholly owned subsidiary of the Manitoba Telephone System (MTS) which has a mandate to compete in telecommunications markets outside of Manitoba. A number of specific objectives have been stated regarding the MTX involvement with Cezar Industries Limited (CIL). The best documented objectives are the financial projections as shown in the October 5, 1985, business plan of the MTX CIL joint subsidiary called International Networking Incorporated (INET). The agreements between these companies are reviewed in more detail in Section III.D. Through these arrangements, MTX would share in the profits produced by INET. INET had forecast net earnings as per its October, 1985, business plan of $2.6 million in fiscal year 1986 (ending July, 1986) and $11.3 million in 1987.

An un-dated document entitled; "MTX Telecom Services Inc. Business Proposal for Investment in ACT and LINE-1 technology with Cezar Industries Limited" says that MTX should consider acquiring the CIL technologies for several reasons:

a) It meets the MTX missions of making money and employing people both directly and indirectly, and the technologies are compatible with telephony.

b) There are market opportunities in Manitoba through the Business Centre of the Manitoba Telephone System. MTS is already engaged in a joint technology trial with CIL and a market study.

c) While not directly affecting MTX, there is a possibility of attracting research and development to Manitoba through the ITC branch of the Province of Manitoba.

d) The products have international applications and there is a large number and variety of distributors for the products.

e) Interconnect and resale of service are coming to Canada at some point in the future. It may be in MTS' best interests to be a participant as early as it can.

MTX also obtained world-wide marketing and distribution rights to the ACT products. There do not appear to be well documented revenue objectives for MTX sales of the ACT products or of the MTX Canadian distribution rights for LINE-1. According to internal interviews, the ACT products were seen to be complementary with MTX activities at that time and with MTX expertise in telecommunications. It was also felt that MTX had good contacts within the industry, including the telephone companies, and that these contacts could be used to advantage in setting up distribution channels. MTX's sister company in Saudi Arabia (SADL) was selling the MITEL SX series of PBX's and the ACT product, which is compatible with these PBX's, was seen as complementary to this sales effort. From the point of view of MTS, the fact that the ACT products link micro-computers with PBX's was seen to be a potential means of entry into the integrated voice/data office automation market.

B. STEPS LEADING UP TO THE INVESTMENT DECISION AND THE CURRENT SITUATION

The following chronology is based on internal MTX documents and substantiated in an interview with Barry Gordon, Vice President, MTS Network Development and Operations:

* In December, 1984, Robert Cezar presented the ACT product concept, then known as the Personal Management System (PMS) to the MTS Policy and Strategy Committee. The Committee asked two employees to determine if MTX had any interest in the product and if so, to develop a business plan.

- In April, 1985, these individuals returned to the Policy and Strategy Committee and noted that Robert Cezar had been in contact with the Manitoba Department of Industry, Trade and Commerce regarding an integrated PBX system under development by Anderson-Jacobson. It appeared that the product could be manufactured in Manitoba, possibly creating several hundred jobs.

- As a result of this meeting, Barry Gordon, then MTS Director of Engineering, was asked to go to the CIL location in June, 1985, to evaluate the opportunity. At this point, there was no business relationship with CIL, simply a letter of interest.

- Following his visit, Barry Gordon concluded that the Anderson-Jacobson product was not of interest because of an estimated $2.5 million required to complete development.

- Mr. Gordon had also evaluated the ACT products which were an outgrowth of the Anderson-Jacobson product and felt that they held more potential. After evaluating a number of possible business arrangements, he proposed an arrangement between CIL and MTS in which MTS would get world-wide technology rights to ACT-I and participate in joint product development of ACT-II at a cost of $400,000 for the technology rights, plus a purchase order for $50,000. LINE-1 was not included in this proposal.

- This proposal was presented to the Policy and Strategy Committee and, on July 5, 1985, to the MTS Executive Committee. The Executive Committee approved negotiation with CIL, noting that finalization would be subject to proof of the technology in a field trial and to approval by the MTS Board of Directors.

- This offer was rejected by CIL but, at this point, MTX expressed interest in the ACT products and LINE-1 as a service offering outside of Manitoba. According to internal documents, MTS had spent $30,000 evaluating the CIL opportunities at this point.

* Don Plunkett then worked out the existing business arrangement with Robert Cezar of CIL. This arrangement goes far beyond that proposed by Barry Gordon and includes the purchase of world-wide marketing, manufacturing and technology rights for the ACT product line as well as a 20% share of INET which was established as a CIL subsidiary set up to manufacture and market the LINE-1 service.

* This proposal was approved by the MTX and MTS Boards of Directors and by the Economic Resource Investment Committee (ERIC) of the Provincial Government.

* MTX subscribed for 150,000 INET shares for $1.5 million U.S. and purchased a further 50,000 shares from CIL for $500,000. This gave MTX a 20% interest in INET.

* MTX paid INET $500,000 U.S. for the rights to the ACT product line. MTX is also required to pay INET an 8% royalty on ACT sales with a minimum cumulative royalty of $300,000 U.S. to be paid by February 15, 1989. Subsequently, MTX also acquired from INET the LINE-1 distribution rights for Canada.

* Prior to finalizing these agreements, MTX undertook several activities to minimize the risk associated with this investment. The most significant of these was the requirement that CIL had a signed agreement in place with PARA Group Inc. to distribute the LINE-1 service franchises on an exclusive basis in the U.S. PARA was to do this in conjunction with Telamarketing, a long distance reseller in the U.S. This agreement called for PARA to establish LINE-1 service hubs in 50 major U.S. cities over the course of one year at a cost of approximately $10 million. The resulting INET business case was highly profitable.

- The final INET shareholders' agreement involving MTX and CIL was signed on November 27, 1985, and INET commenced operations.

- After several months it become apparent that PARA was having trouble fulfilling its contractual obligations to acquire LINE-1 hardware and install and service LINE-1 service hubs. PARA was considered to be in anticipatory breach of its agreement with INET in early July, 1986, and was so advised by INET.

- With the loss of PARA, INET is now required to develop a direct marketing capability, something never envisaged in the original business plan.

- A revised INET marketing plan was produced in mid October, 1986. Additional details on INET's business plans are included in Section IV.

- In the short term, INET will be concentrating on LINE-1 subscription sales from its Sunnyvale Service Bureau. The first subscribers were signed up in September and October, 1986. Current projections are for a growth rate of 600 customers per month.

- MTS is in the process of establishing an in-house trial of LINE-1 service to evaluate its potential as a product offering in Manitoba. Several internal users were participating in this trial as of October, 1986.

C. COMMENTS ON THE ADEQUACY AND ACCURACY OF INFORMATION

Obviously the agreement with Cezar has not met the expectations established in the October, 1985, INET business plan. A number of short comings in the information on which the original business decision was made appear to be as follows:

- Proof that the technology worked, together with a rigorous evaluation of user acceptance of the service would have greatly reduced the investment risk. If possible, an evaluation of user acceptance could have consisted of controlled monitoring of a field trial. Other approaches could have included focus group research, in-depth interviews or even a simulated field trial involving attendant call-forwarding, call-screening, etc.

- PARA played a key role in the proposed distribution process. While a "safety net" was built into the shareholders' agreement requiring that an agreement between CIL and PARA be signed, this seems not to have been enough. Better information was required on the capabilities of PARA and on the support it needed from Telamarketing and INET. The same appears to be true of Telamarketing. In fact, even now, details on the problems experienced by PARA and Telamarketing are sketchy. If there was any question about PARA's ability to deliver, presumably other distributors could have been identified and a non-exclusive arrangement with PARA signed.

- The time taken to act on PARA's inability to meet the terms of its agreements suggests that better information was required on its performance and on the performance of the other firms involved. This information may have been obscured because of the number of players involved, i.e., MTX, CIL, INET, PARA and Telamarketing. Given the complexity of the business arrangements and the proposed distribution channels, methods of obtaining performance information from key links in the distribution chain would seem to be vital.

- Although of lesser importance, in terms of the initial investment there appears to have been little in the way of a solid business plan for the ACT product line. This would have provided additional information for ensuring a sound investment decision. The absence of a plan also makes reporting of the project status difficult, as it is unclear whether objectives have been met or not.

FIGURE 3.1

LIST OF MAJOR AGREEMENTS

1. Shareholders Agreement between CIL & MTX and other persons who may become shareholders of INET.

2. Stock Purchase Agreement covering the purchase of 150,000 INET shares by MTX.

3. ACT Technology Transfer Agreement between CIL/INET and MTX concerning the sale of ACT technology by INET to MTX.

4. Conditional License Agreement between INET and MTX covering the grant of a non-exclusive license by INET to market LINE-1.

5. Agreement for Purchase of Shares between CIL and MTX under the terms of which MTX purchases from CIL 50,000 shares of the capital stock of INET.

6. Security Agreement between CIL/INET and MTX under which INET grants to MTX a continuing security interest in and lien upon the collateral described in the agreement. It expires November 27, 1986.

7. Estoppel Certificate of PARA Group confirming that the equipment purchase, software licence and marketing agreement dated September 5, 1985 between PARA and CIL is in full force and effect.

Note: All documents are dated November 27, 1985 except the Estoppel Certificate of the PARA Group which is dated November 25, 1985. A number of other legal documents exist which deal with components or implications of the major agreements.

D. DESCRIPTION OF THE BUSINESS ARRANGEMENTS

A number of business agreements were entered into by MTX directly. These included the arrangements worked out with CIL (Cezar) and with INET. Figure 3.1, opposite, includes a list of the major agreements. As noted previously, the success of these ventures was also dependent on agreements between parties over which MTX has little or no control. These include the agreements between INET, PARA and Telamarketing regarding the marketing and distribution of LINE-1. A chart summarizing the major agreements involved in MTX's relationship with Cezar is shown in Figure 3.2, over. In summary, these agreements were as follows:

* CIL created a wholly owned subsidiary called INET with authorized share capital of 1 million shares.

* CIL transferred its interest in the LINE-1 and ACT technologies to INET in exchange for 850,000 INET shares. MTX subscribed for 150,000 INET shares for $1.5 million U.S. and purchased a further 50,000 shares from CIL for $500,000. This gave MTX a 20% interest in INET.

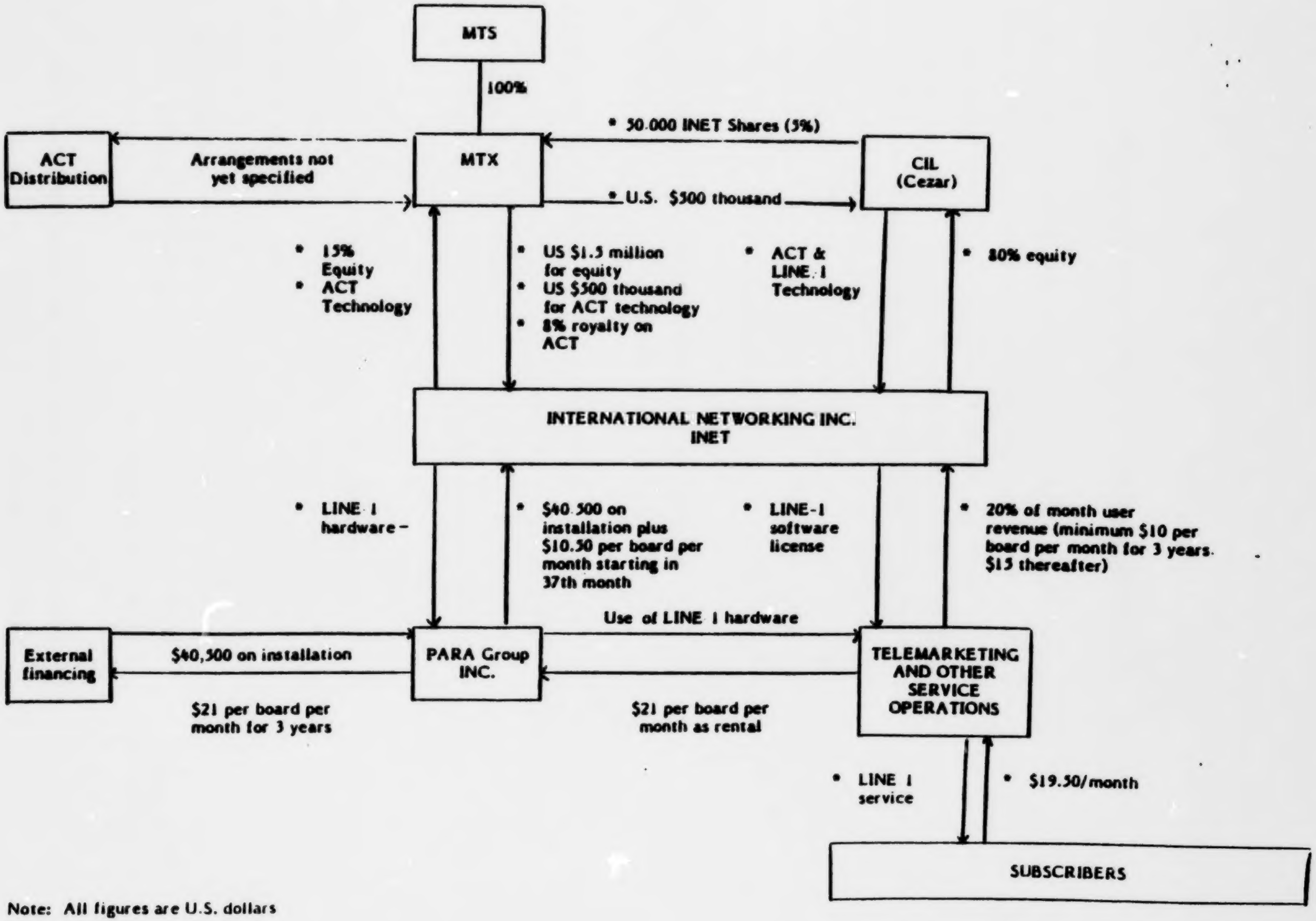
* MTX bought the world-wide technology and marketing rights to ACT, (subsequently known as "Telefficient") for $500,000 U.S. from INET. A royalty provision also exists whereby 8% of ACT net sales revenues flow from MTX to INET. This provision calls for a minimum cumulative royalty of $300,000 U.S. to be paid by February 15, 1989. It should be noted that CIL has patents pending on the ACT and LINE-1 technology.

* Subsequently MTX also acquired from INET the LINE-1 distribution rights for Canada.

* Prior to finalizing these agreements, MTX required CIL to have a signed marketing agreement in place with PARA to distribute the

FIGURE 3.2

OVERVIEW OF BUSINESS ARRANGEMENTS


MTS
100%
ACT Distribution
Arrangements not yet specified
MTX
* 50.000 INET Shares (5%)
* U.S. $500 thousand
CIL (Cezar)
* 15% Equity
* ACT Technology
* US $1.5 million for equity
* US $500 thousand for ACT technology
* 8% royalty on ACT
* ACT & LINE 1 Technology
* 80% equity
INTERNATIONAL NETWORKING INC. INET
* LINE 1 hardware -
* $40.500 on installation plus $10.50 per board per month starting in 37th month
* LINE-1 software license
* 20% of month user revenue (minimum $10 per board per month for 3 years. $15 thereafter)
External financing
$40,500 on installation
$21 per board per month for 3 years
PARA Group INC.
Use of LINE 1 hardware
$21 per board per month as rental
TELEMARKETING AND OTHER SERVICE OPERATIONS
* LINE 1 service
* $19.50/month
SUBSCRIBERS

Note: All figures are U.S. dollars

LINE-1 service franchises on an exclusive basis in the U.S. PARA was to do this with Telamarketing and the agreement called for PARA to establish a LINE-1 service hub in 50 major U.S. cities over the course of one year. The cost of this was estimated by INET to be approximately $10 million (U.S.).

* The INET shareholders' agreement between CIL and MTX provided for MTX acquiring one seat on the INET Board of Directors. It also had 35 restrictions on INET's freedom to act without the concurrence of MTX. Some of these are:
  - Power of VETO on the types of new businesses that INET could enter.
  - Approval of changes to bylaws.
  - Approval of all business plans and budgets.
  - Approval of any major expenditures or commitment of funds.
  - Approval of any LINE-1 licensing arrangements.
  - Approval of any changes in share capital structure.
  - Approval of any plan to create a subsidiary.
  - Approval of any major contracts.
  - Approval of accounting procedures.
  - Approval of the hiring and firing of senior officers.

A "business arrangement overview" is shown in Figure 3.3, following, which summarizes the responsibilities of the various players for the key components of the ACT and LINE-1 businesses. The major obligations of MTX, CIL and INET are also shown. A distributor is shown because the agreements pre-supposed that distributors would ultimately market the products. PARA is discussed as the LINE-1 distributor although it did not meet the terms of its agreement. INET is currently marketing directly to end-users and has recently reached agreements with distributors in San Francisco and New York. New negotiations are under way with PARA. No real distributor agreements have been worked out for ACT-I and II except with Dynamic Interconnect of Montreal (DIM). However, MTX

FIGURE 3.3

BUSINESS ARRANGEMENTS OVERVIEW

Item	Act 1 and Act 2	Line 1
R&D	* MTX does all R&D.	* CIL does sustaining engineering under contract to INET.
Manufacturing Location	* Currently through CIL in Sunnyvale. Quotes from Manitoba firms have been obtained.	* CIL contracts out most manufacturing and does final assembly in-house.
Marketing and Distribution	* MTX has world-wide rights and hopes to sell through distributors.	* MTX has Canadian rights, but has been inactive. INET has world rights outside of Canada and is selling direct and through distributors.
After Sales/Service	* Distributors are responsible for first line service e.g. component replacement. MTX is responsible for repair and major problems and software maintenance.	* Distributors are responsible for first line service. CIL provides service under contract to INET.
Obligations on -		
MTX	* Owns the ACT technology. * Has a 8% royalty payment to INET with a minimum of $300 thousand by 1989. * Will be responsible to distributers for manufacturing, some advertising and repair.	* Non-exclusive distributions rights for Canada.
CIL	* Manufactures the products under contract to MTX.	* Manufactures product and conducts sustaining engineering under contract to INET. * Transferred LINE-1 and ACT technology to INET.

Item	ACT-I and ACT-II	LINE-1
INET	* Transferred ACT technology to MTX. * Collects 8% royalties; minimum of $300 thousand by 1989.	* Has rights to LINE-1. * Responsible to distributors for manufacturing support, guarantees, training.
Distributor	* Not specified except responsibilities of Dynamic Interconnect Montreal Limited.	* PARA was to offer service in 50 metropolitan areas by Sept. 5 1986.
	* Intentions are to have joint responsibility for advertising. Distributers handle sales, user support, including training and first level service.	* PARA was to do all advertising, promotion and marketing and pay royalties to INET.

management has stated their intention to terminate this agreement and that this agreement will not form the basis of future distributor agreements.

E. COMMENTS ON THE AGREEMENTS

This section comments on MTX's rights and obligations under some of the more important agreements.

INET Security Agreement

This Agreement is dated November 27th, 1985, and is between INET and MTX. It was signed at the same time as a series of other documents, including those listed in Figure 3.1. All documents collectively are called Agreements.

The Security Agreement, for the performance of all INET's obligations to MTX, is given by INET, granting to MTX a security interest in all of its property and assets. This is covered by the various clauses under the definition "Collateral", which outlines the actual securities in Section 2. Section 4 deals with additional representations and warranties. Section 5 deals with additional covenants of INET. Section 5 gives authority to MTX to do certain things in the event of default. Section 8 sets up the remedies for default and how they are to be performed. Section 10 sets out the fact that the security interest can be subordinated to any institutional or commercial lender with proper authority given by the INET Board of Directors.

The governing law is the State of California. Any amendments to the Agreement have to be executed by all parties.

The obligation of INET under the Security Agreement ends on November 27, 1986, unless, under Section 3, Obligation there is an extension or renewal of the Agreement. There will have to be agreement between the parties that it should be extended or renewed. If this extension or renewal takes place, it will have to be duly registered pursuant to the law of the State of California.

If the Security Agreement is allowed to lapse on the 27th day of November, 1986, pursuant to its current terms, there will be no continuing obligations.

Any remaining obligations will be assumed by INET, of which MTX is a shareholder and pursuant to the terms of the various Agreements.

Options Open to MTX to Bail Out the INET Deal

MTX has no more or fewer options than any other shareholder of INET. There does not appear to be any option for MTX to bail out of the INET deal without a mutual agreement with all shareholders of INET.

Dynamic Inter-Connect Montreal (DIM) Rights in Quebec or Ontario

The Agreement between MTX and DIM is dated March 5, 1986, and permits DIM to transfer to a nominee within 30 days (which presumably has not occurred).

Under the Scope of the Agreement, DIM becomes the exclusive distributor to market ACT-I and ACT-II in Quebec for six months, beginning on the date of the acceptance.

The acceptance appears to be under clause 5.1 where MTX appoints and DIM accepts MTX's appointment of DIM as the exclusive distributor for the products within the territory.

The exclusivity, assuming it was effective the 5th day of March, 1986, would have expired on the 4th day of September, 1986. There has been no extension of the agreement.

Clause 7.1 (iv), called covenants of MTX, says that, in the event of an expiry of DIM's six month term of appointment as distributor of the products in the territory and subject to MTX's decision at that time to appoint a distributor for a further six months for the same area, DIM shall have the right of first refusal to such appointment.

The Agreement may have expired, if MTX has decided not to appoint any distributor for a further six months and has so notified DIM in writing.

If MTX wished to appoint a distributor for a further six months, then DIM would have the right of first refusal to such appointment and that renewal would be on the same terms and conditions, except for time, for the succeeding six months, and except that either party could terminate with 90 days prior written notice to the other.

The clause 15.2 - Termination - deals with how termination can be done, but it would have to be done by written notice of MTX to DIM. There is no reference in any of the material that this occurred.

PARA Agreement

The PARA Agreement was entered into by CIL on the 5th day of September, 1985, between Cezar Industries (CIL) and the PARA Group Inc., a California corporation called "PARA" and all its terms and conditions are set out in the agreement.

Upon the formation of INET, CIL transferred to INET all the rights, terms and conditions of the PARA Agreement and only the shareholders of INET could cause INET to take action against PARA pursuant to the terms of its Agreement if PARA has not lived up to its responsibilities.

LINE-1 System - Conditional Licence Agreement

It would be up to INET and/or whoever granted the licence to determine whether or not MTX has proceeded properly and is not in default under the Agreement.

IV. CORPORATE BACKGROUNDS

The following section provides a description and the corporate backgrounds of the various players.

A. CEZAR INDUSTRIES LIMITED

This section is based on a conversation with Robert Cezar, President, CEO and Chairman of the Board of CIL, on Dun and Bradstreet reports and on information from the U.S. Securities and Exchange Commission. A number of computer database searches were conducted for newspaper articles in the U.S. and Canada. The following is a brief background on Mr. Cezar:

- Born in Montreal in 1941.
- Worked for RCA in Montreal.
- Was the director of engineering during the launch of CITY-TV in Toronto.
- He tried to rescue the multi-lingual Toronto station in 1982-83.
- He tried to take over Quebecair in 1982.
- From 1978 until June, 1982, Mr. Cezar was Chairman of the Board of R. Cezar International Ltd., a supplier of electronic products to the broadcast industry.
- Since June, 1982, he has been Chairman of the Board of Directors of CIL.

The Board of Directors of CIL is as follows:

Name	Position
David H. Brandin	Director
Robert M. Cezar	Chairman of the Board of Directors President and Chief Executive Officer
David G. Ernest	Director
James G. Grugan	Vice President, Finance, Chief Financial Officer Secretary and Treasurer
Ronald B. Haggart	Director and Chairman of the Audit Committee
Robert J. Wooten	Director, Executive Vice President

Mr. Brandin is President of Strategic Technology Incorporated, a personal consulting firm in information technologies. Prior to that, for more than five years, he was a Senior Scientific Advisor at Stanford Research Institute (SRI International). He also served as Vice President for Computer Science and Technology at SRI International.

Mr. Grugan rejoined the company as Vice-President, Finance and Chief Financial Officer, Secretary and Treasurer in October, 1985. From 1981 to October, 1985, Mr. Grugan served as Vice President and Chief Financial Officer of Input, a market research firm in the computer and telecommunications industries.

Mr. Ernest has been a director of the company since 1982. From 1980 to 1982 he was Vice-President, Finance and Chief Financial Officer of R. Cezar International Ltd. For more than five years, Mr. Ernest has also been president of EMCO Electronics Inc., a consulting firm.

Mr. Haggart has been a director since May, 1984. He has been a senior producer of television current affairs with the Canadian Broadcasting Corporation for more than 5 years.

Mr. Wooten has held a number of executive positions with the company since being appointed a director in May, 1984. He was an independent consultant from November, 1982, to October, 1983. Prior to that, he was President of Enhance Corporation, a direct marketing company.

The major shareholders are as follows:

Name	Number of Shares	Percent of Class
David Brandin	100,000	.26%
Robert Cezar	19,117,779	50.08%
Lorne Cezar	2,000,000	5.24%
David G. Ernest	3,013,577	7.89%
Ronald Haggart	100,000	.26%
Robert Wooten	1,169,231	3.06%
All directors and officers as a group	24,138,587	63.23%

CIL was incorporated as International Video Corporation ("IVC"), in March 1966. The company filed for protection under Chapter XI of the Federal Bankruptcy Act in June, 1977, and in April, 1982, entered into a Merger Agreement with R. Cezar International, Ltd. ("RCI"). As a result of this, funds were provided by RCI for the implementation of the Company's proposed Plan of Arrangement whereby, upon confirmation, the Company emerged from Chapter XI on June 28, 1982.

The Company continues to sell refurbished IVC equipment, spare parts and accessories, and provides service for its high-performance videotape recorders and ancillary equipment which are still in use throughout the world. However, the Company refocussed its activities into research and development in the telecommunications industry, and the sale of the ACT and LINE-1 technologies represents the first successes of this redirected effort.

INET, an 80% owned subsidiary, is engaged in the business of causing the LINE-1 technology to be brought to the marketplace through arrangements with independent resellers of telecommunications products and services arranged by PARA. The agreement with PARA was an exclusive arrangement until September, 1986.

Financial results are for years ended July 31:

	1982	1983	1984	1985	1986
Sales (000's)	4,189	3,922	3,284	940	985
Net Income (000's)	432	(1,250)	(683)	(807)	18
Net Worth (000's)	1,218	509	(165)	(963)	921

It should be noted that the positive results for 1986 reflect the transactions with MTX and the consolidation of INET's results into CIL's.

B. CIL INTERNATIONAL NETWORKING (INET)

INET is 80% owned by CIL and 20% owned by MTX. It has no full-time employees. The Board of Directors is as follows:

D. Plunkett	Chairman/President MTX
D. Brandin	Director
B. Gordon	Director/V.P. MTS
J. Grugan	Director, CFO and Secretary
R. Cezar	Director, CEO and President

Financial results are:

	August 1986
Sales (subscriptions and interest)	5,202
Net Income	(25,429)
Net Worth	1,599,754

Robert Cezar is a director and is also CEO and President of INET. Don Plunkett (president of MTX) is the MTX appointee to the INET board and is the Chairman. Barry Gordon, an MTS V.P. is also on the Board and is a CIL appointee. The remaining two INET directors are also on the Board of CIL. INET has no full-time employees of its own. Resources for the Sunnyvale LINE-1 marketing effort are contracted from CIL and are paid for by INET or MTX. Operating expenses show a net loss of about U.S. $25,000 per month. Subscriber revenues to date have been negligible.

Mr. Cezar is aware of the limited ability of a small company like CIL INET to successfully market LINE-1. He has assigned the immediate marketing responsibilities to his brother, Lorne Cezar, to launch the service in Sunnyvale and to attract potential distributors. The ultimate aim is to attract a large marketing organization such as one of the U.S. Bell regional operating companies (RBOC) to market its product. At the same time, additional R & D efforts are under way to develop a subsequent LINE-1 type technology capable of providing enhanced functionality to old cross-bar central exchange switches.

The following excerpt from INET's marketing plan of October 8, 1986, shows the direction INET hopes to take in marketing LINE-1.

"To demonstrate the viability of the product in a convincing manner to the Regional Bell Operating companies (RBOCs), INET will operate a LINE-1 Service Organization (S.O.) with a sales goal of thousands of PINs. The fundamental objective of the level of sales in the S.O. is to demonstrate the marketability and profitability of LINE-1; the secondary objective is to generate profit for INET. Indeed, it has always been INET's objective to sell (or lease) LINE-1 technology to resellers. Although the S.O. activity might be profitable, substantially more tangible profits will be derived from major sales operations that bring the product to the mass market. This is also a reflection on the realities that INET lacks sufficient resources to mass market LINE-1. Thus, all of INET's marketing strategy is geared toward RBOC sales to end users.

FIGURE 4.1

INET MARKETING STRATEGY

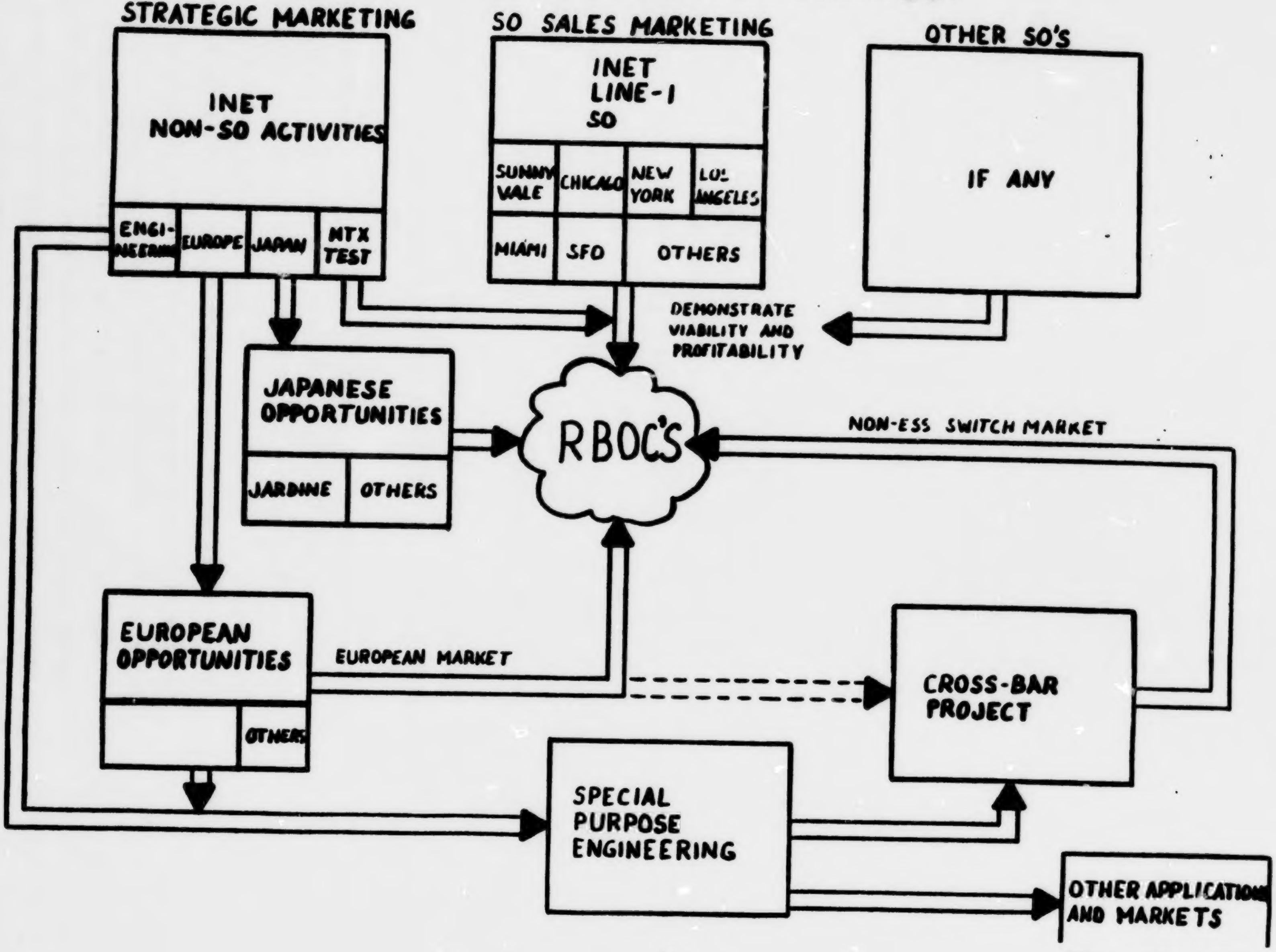

STRATEGIC MARKETING
INET NON-SO ACTIVITIES
ENGI-NEERING
EUROPE
JAPAN
NTX TEST
SO SALES MARKETING
INET LINE-1 SO
SUNNY VALE
CHICAGO
NEW YORK
LOS ANGELES
MIAMI
SFO
OTHERS
OTHER SO'S
IF ANY
DEMONSTRATE VIABILITY AND PROFITABILITY
JAPANESE OPPORTUNITIES
JARDINE
OTHERS
RBOC'S
NON-ESS SWITCH MARKET
EUROPEAN OPPORTUNITIES
OTHERS
EUROPEAN MARKET
CROSS-BAR PROJECT
SPECIAL PURPOSE ENGINEERING
OTHER APPLICATIONS AND MARKETS

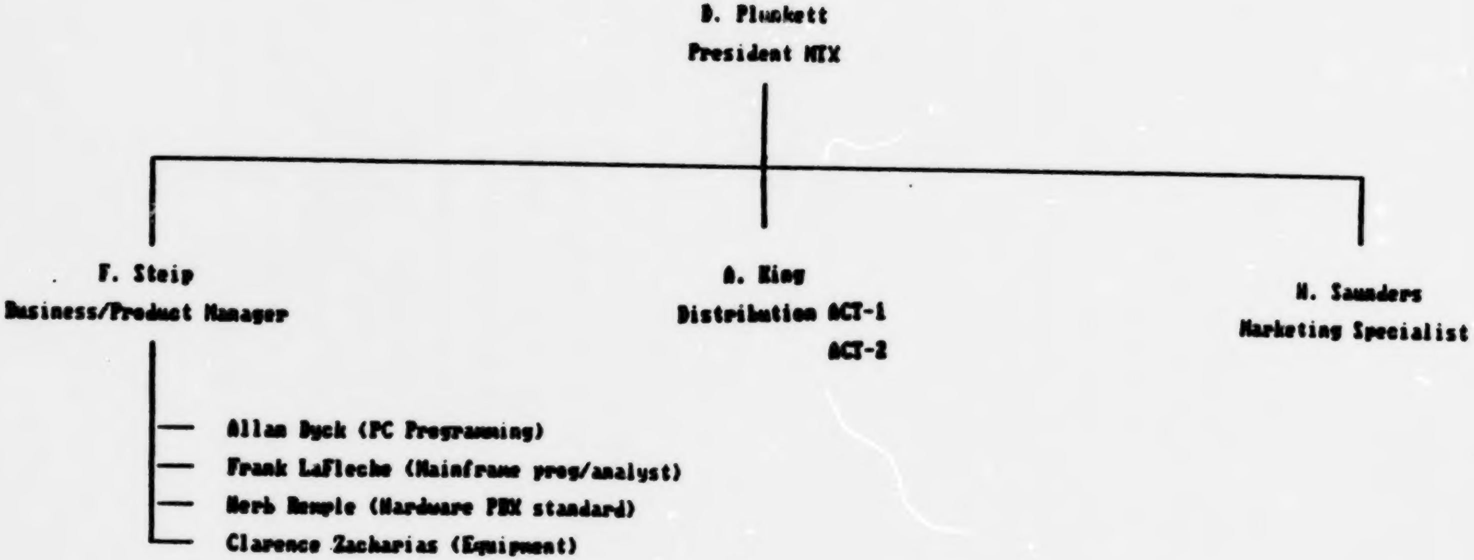
Figure 4.1, opposite, illustrates this objective and shows that even foreign and special purpose engineering sales are first steps toward the ultimate RBOC targets".

C. MTX

MTX has spent $517,801 on R&D associated with the Cezar initiatives in addition to the original $2.5 million U.S. investment. This is net of $28,472 in sales. In addition, significant legal expenditures have been incurred. MTX has focused its efforts on technical improvements to the ACT product. Marketing efforts appear to have been sporadic and not very successful. Virtually nothing has been done with respect to the marketing of LINE-1 although a limited technical trial has been launched. Recognizing a need for marketing resources, an individual has been hired to sell the ACT product. This individual expected to have a sales function, but did not have the necessary marketing support, e.g., marketing strategies, promotional materials, pricing, etc. in place to perform a sales function. He has instead tried to address these shortcomings with limited resources. A market research study was contracted out to Susan Loren, a U.S. marketing research firm. This provided some direction, but the resulting forecasts are not promising. It appears that very little market assessment of the ACT and LINE-1 technologies was conducted prior to the arrangements being negotiated with Cezar. The development of a marketing capability and the lack of direction of current marketing resources seem to be weaknesses. There also appears to have been a lack of market assessment of the ACT and LINE-1 before the agreements were signed. As mentioned before, we do not feel that the INET shareholders' agreement with CIL optimized MTX's position. It is doubtful whether MTX currently has the marketing expertise or the necessary resources to market any of the products. An overview of the organizational structure of the Cezar project is shown in Figure 4.2, over.

FIGURE 4.2

MTX Organizational Structure of the Cesar Project


D. Plunkett
President MTX
F. Steip
Business/Product Manager
A. King
Distribution ACT-1
ACT-2
H. Saunders
Marketing Specialist
Allan Dyck (PC Programming)
Frank LaFleche (Mainframe prog/analyst)
Herb Remple (Hardware PBX standard)
Clarence Zacharias (Equipment)

D. DISTRIBUTORS

The distribution organizations which were identified to market the LINE-1 product in the U.S. do not seem to have had the capabilities to do so. The agreement between MTX and Cezar was contingent on an agreement being signed with PARA Group Inc. PARA was to launch the service in fifty U.S. cities within one year. PARA, a small firm with only six employees, was, in turn, dependent on Telamarketing Inc. to do the actual retail sales. This firm has since gone out of business. While in business, Telamarketing apparently devoted it energies to cellular telephone products rather than to LINE-1. Dynamic Interconnect of Montreal (DIM), with which MTX signed an exclusive agreement for the distribution of the ACT products in Quebec, is also a very small company with only six employees. MTX management have expressed concerns about the company's technical expertise.

E. CONCLUSION

Overall, the relationship between the various companies was complex, and this complexity, in itself, is a partial explanation of the lack of success to date. Proper management controls would be difficult to establish and put in place in this type of relationship.

The major players were MTX and CIL. INET was, and still is, not much more than a shell. MTX and CIL have sound technical resources, but both firms are severely restrained in terms of their marketing capabilities. As a result, a real need was identified for a distributor for LINE-1, but PARA and Telamarketing were clearly not organizations with the financial, marketing or management resources to provide the required level of support. Also, it is unreasonable to assume that a manufacturer can assign complete marketing responsibilities to a distributor. To some extent, the approach of negotiating yet another relatively complex arrangement was a simplistic means of filling the marketing gap.

FIGURE 5.1

MARKET FAILURE RISK ANALYSIS

GENERAL REASONS FOR NEW PRODUCT FAILURE	DEGREE OF RISK BY PRODUCT		
	ACT-1	ACT-2	LINE-1
MARKET TOO SMALL	HIGH	HIGH	LOW
POOR MATCH FOR COMPANY	HIGH	HIGH	LOW (WITH MTS)
NOT NEW/NOT DIFFERENT	HIGH	MEDIUM	LOW
NO REAL BENEFIT	MEDIUM	MEDIUM	LOW
POOR POSITIONING/ MISUNDERSTANDING OF USER NEEDS	HIGH	HIGH	HIGH
OVER ESTIMATION OF USER ACCEPTANCE	MEDIUM	MEDIUM	MEDIUM
LITTLE SUPPORT FROM CHANNEL OF DISTRIBUTION	HIGH	HIGH	LOW (WITH MTS)
FORECASTING ERROR	MEDIUM	MEDIUM	MEDIUM
COMPETITIVE RESPONSE (IF SUCCESSFUL)	HIGH	HIGH	HIGH

V. COMPARISON WITH KEY SUCCESS CONSIDERATIONS FOR THE HIGH TECH INDUSTRY

The following summary forms the background to MTX's current strategic position with respect to the ACT and LINE-1 products as discussed in the previous sections of the report.

A. RISKS OF NEW PRODUCT FAILURE

Some of the major reasons for the failure of a new product are shown in Figure 5.1 together with our opinion of the risks for the three products.

- Market is Too Small. The risk of failure due to the market being too small is much greater for the ACT products than for Line -1. The ACT products require specific hardware (IBM P.C. or compatible and PBX) and are suitable to small to mid-size organizations with up to 96 users. Customization would be required to meet the needs of larger organizations. It should be noted that the total U.S. sales potential for ACT-I according to the Susan Loren associates report is $1.51 to $3.02 million while estimates for ACT-II were from $3.84 to $7.68 million. LINE-1 is not hardware dependant from the users point of view and is suitable for any number of users in any size organization.

- Poor Match for the Company. The ACT products are related to telecommunications and are consistent with MTX's area of expertise. However MTX has no track record in selling this type of product. In defining opportunities, strategic questions such as "what business are we in?" help in identifying markets and generating ideas that fit the unique capabilities of an organization. MTX appears to be involved in many business activities ranging from consulting to research and development. While its subsidiary, SADL, is involved in the distribution of hardware in Saudi Arabia, MTX itself does not have a track record for sales of telecommunications hardware in North

America. MTS, however, obviously has a track record in the sales of telecommunications services in Manitoba. A close alignment with MTX could be used to build on that organization's strength in the sale of the LINE-1 service.

- Not New/Not Different. There are aspects of all the products which are new and different. However, there is a greater risk with ACT-I that it will not be perceived as new or different. Potential users may perceive many of its functions as not being substantially different from existing attendance boards, directories and message taking procedures etc. While this risk is decreased with ACT-II there still may be a perception that it adds more functionality to a PBX when in many cases not even all the existing PBX functionality is used. A number of other products exist which, while generally dissimilar, do overlap with some ACT-II features such as Call Detail Recording and which would compete for telecommunications budget expenditures. The lowest risk of being seen as not new or different is with the Line-1 service. Subscription services do exist which provide non-remote call forwarding and other features, although the capabilities of these services are very limited compared to LINE-1.

- No Real Benefit. All the products have real benefits, however there is some risk that these benefits may not be perceived by substantial segments of the markets for the ACT products. The ACT-I features may be seen as beneficial to receptionists and to organizations which currently have difficulty keeping track of employees. However, some potential users may not see much benefit relative to existing methods of keeping track of people. Decision-makers may also not empathize with their receptionists' needs. Providing a computer to a receptionist may not be seen as an optimal allocation of hardware resources by some organizations. The benefits are greater with ACT-2 but their is still some risk that a substantial segment of the market will not see the product as beneficial, particularly if the installed PBX is not capable of transferring calls externally. LINE-1 appears to have less risk of not being seen as beneficial. Its capabilities and its savings potential are likely to be seen as beneficial to most users who travel, receive quite a few phone calls and who use long distance.

- Poor Positioning/Misunderstanding of User Needs. Positioning is the identification of user need attributes and the description of the levels of each attribute for a new product. This risk of poor positioning exists for any new product and especially for those that are unique and significantly different from existing products on the market. LINE-1 could be positioned as an exclusive, business-oriented service, allowing busy executives to stay in touch as was implied in one of its previous names, "Execu Track". Positioning statements might include "intelligent telephone", "virtual telephone" or "virtual PBX". Given that the target user is likely a business person who travels frequently and uses the telephone a good deal, including credit card calls, positioning the LINE-1 as a consumer product or as a game of some sort could be fatal. Positioning it as an enhanced call forwarding service only would also be a mistake, because existing call-forwarding services may not be seen as very useful. The positioning of the ACT products is unclear. One way of positioning them is as "human resources inventory systems". However, this seems to miss the communication aspect, including messaging. Qualitative research with users or potential users who understand the products could help significantly in minimizing the risk of poor positioning.

- Over Estimation of User Acceptance. This includes "human factors" problems which can be addressed by engineering the products so that they are as easy to use as possible. User acceptance can also be enhanced by good user training, including user manuals and on-going support through user groups, customer service "hot-lines" etc. User acceptance must be high for both users and callers, and for receptionists in the case of ACT. One potential problem is that users and callers may be reluctant to deal with the machine-type interface.

Replacing the chimes and other tone commands by digitized voice (e.g. Dec talk) might reduce this reluctance. Another concern with respect to remote call forwarding is that few executive or other individuals will remember or bother to report their whereabouts every time they move.

- Little Support from Channels of Distribution. This problem likely represents a high risk for all products because distribution channels are not in place. Also, being new products, there is a risk of poor understanding of the products and how to sell them among distributors, and a poor understanding of the requirements of distribution among the suppliers. However, if sales of LINE-1 are made through MTS in Manitoba, good distribution support should be provided.

- Forecasting Error. Risks exist for all the products. These risks could be minimized through the use of sequential forecasting methods. Overall market and market share estimates are necessary for the initial decision to proceed. Then it makes sense to develop forecasts for a specific test market, with the results used to modify the initial market share estimates.

- Competitive Response. Competitors will probably copy successful products. The lead time required to develop the products and the patent applications may provide some defence. On-going service improvements and rapid market share gains would be further methods of defense while ensuring that advantage is taken of the competitive lead times.

Overall, ACT-I is potentially the highest risk. ACT-II presents a higher risk than LINE-1. The major risks for LINE-1 include poor positioning/misunderstanding of user needs and competitive response. The first risk could be addressed by conducting user needs research, including focus group research and proper evaluation of field trials. INET does have

FIGURE 5.2

Industry Maturity Guide

Descriptors: / *Stages of Industry Maturity:*	Embryonic	Growth	Mature	Aging
Growth Rate	Accelerating. Meaningful rate cannot be calculated because base is too small.	Substantially faster than GNP. Industry sales expanding significantly.	Growing at rate equal to or slower than GNP. More subject to cyclicality.	Industry volume declining.
Industry Potential	Usually difficult to determine.	Demand exceeds current industry volume, but is subject to unforeseen developments.	Well known. Primary markets approach saturation.	Saturation is reached. Supply capability exceeds long-term demand.
Product Line	Line generally narrow. Frequent changes tailored to customer needs.	Product lines undergo rapid proliferation. Some evidence of products oriented toward multiple industry segments.	Product line turnover but little or no change in breadth. Products frequently oriented toward narrow industry segments.	Product line shrinking, but tailored to major customer needs.
Number of Competitors	Few competing at first, but number increasing rapidly.	Number and types are unstable. Increase to peak, followed by shake-out and consolidation.	Generally stable or declining slightly.	Declines, or industry may break up into many small regional suppliers.
Market Share Stability	Volatile. Share difficult to measure. Share frequently concentrated.	Rankings can change. A few firms have major shares.	Little share volatility. Firms with major shares are entrenched. Significant niche competition. Firms with minor shares are unlikely to gain major shares.	Some change as marginal firms drop out. As market volume declines, market share generally becomes more concentrated.
Purchasing Patterns	Varies. Some customers have strong loyalties; others have none.	Some customer loyalty. Buyers are aggressive, but evidence of repeat or add-on purchases. Some price sensitivity.	Suppliers are well known. Buying patterns are established. Customers generally loyal to limited number of acceptable suppliers. Increasing price sensitivity.	Strong customer loyalty as number of alternatives decreases. Customers and suppliers may be tied to each other.
Ease of Entry	Usually easy. Opportunity may not be apparent.	Usually easy. Presence of competitors is offset by vigorous growth.	Difficult. Competitors are entrenched. Growth is slowing.	Little incentive.
Technology	Important to match performance to market needs. Industries started on technological breakthrough or application. Multiple competing technologies.	Fewer competing technologies. Significant product line refinements or extensions likely. Performance enhancement is important.	Process and materials refinement. Technologies developed outside this industry are used in seeking efficiencies.	Minimal role in ongoing products. New technology may be sought to renew growth.

some lead time in terms of potential competitive response. Advantage should be taken of this time through gains in market share and enhancements to the product.

B. STAGES OF INDUSTRY DEVELOPMENT

One way of describing the industry in which the ACT and LINE-1 products are competing is the value-added telecommunications industry. That is, these products add value to existing telecommunications products and services, including PBX's and basic telephone service. Referring to Figure 5.2, opposite, the value-added telecommunications market could be described as embryonic, especially in the area of voice and voice data integrated services. The figure shows the classic signs of an embryonic industry:

- One sign is that growth is increasing, but difficult to measure because the base is too small. The Susan Loren market analysis report identifies only five companies which market products that functionally overlap with ACT-I. All but one supplier has fewer than 15 employees. The largest, STAR Technologies Inc., has 100 employees, but its major line of business is computer and related equipment manufacturing. Another system which has some similarity to ACT-II, including Call Detail Recording, authorization codes and speed dialing, is produced by OPTIMUM Communications of Sunnyvale, California, called the Opcom XL 150. Data pro reports that 95 of these systems have been installed. With respect to LINE-1, there are four similar services currently available. Bell Canada does offer non-remote CENTREX-based call forwarding in some exchanges. AT&T's ISDN network, when complete, will include a service called Access 7 which will be more like LINE-1.

- The industry potential is difficult to determine in an embryonic industry. The total market potential for the ACT products can be determined by the installed base of compatible PBX's. The potential demand which will dictate the number of sales within that defined population is more uncertain. Also, alternate solutions such as incorporating part or all of the ACT functionality into PBX's could diminish the demand for "stand-alone" products. The potential for LINE-1 is also dependent on a number of factors. One would expect that, initially, the market would consist of executives and professionals who phone frequently. However, other groups may well have a need and the success of the service will be determined by the extent to which it can meet the market needs and other factors, including price, competition, etc.

* Product lines are generally narrow, with frequent customization required. It may be arguable whether or not the ACT and LINE-1 product lines are narrow. However, it does appear that frequent customization is required. A potential sale of ACT-II to a hotel chain has been held up partially due to the requirement for customization to make it compatible with the chain's PBX's. LINE-1 has been installed on premises at Convergent Technologies to meet that company's particular requirements rather than providing the service through the INET hub in Sunnyvale.

* There are few competitors at first in an embryonic industry. It can be expected that if any of the products prove successful, competitors will make an all out bid to develop similar products.

* Market share is volatile and difficult to measure. Because the numbers are so small, market shares could change dramatically. For example, it may be that the Opcom XL 150 holds the lion's share of the market for products potentially competitive with ACT, with an installed base of 95. This market share could obviously drop dramatically if another supplier could install 50 or 100 similar systems. Share is concentrated now because there are only a few

players. As more competitors enter, share will become less concentrated unless one or two major players in telecommunications enter the industry and consolidates the market.

- Purchasing patterns. It is doubtful that any product loyalty would exist for the ACT products or LINE-1, or for the suppliers. Interestingly, the Opcom XL 150 is being marketed by AT&T, a move that may produce more loyalty because of AT&T's position and reputation. Association with MTS, a member of Telecom, could produce greater loyalty in the Canadian market.

- The barriers to entry into an embryonic industry are usually low. The entry into the markets for ACT and LINE-1 would probably be quite easy for potential competitors. Existing telecommunications firms may have to overcome technological hurdles; however, they would have other strengths such as marketing, distribution and financial resources. Companies well positioned to market a service competitive with LINE-1 include the regional Bell operating companies in the U.S. and the members of Telecom Canada. PBX manufacturers and manufacturers of other types of telephone equipment may be well positioned to enter this market.

- The last characteristic of an embryonic industry shown in Figure 5.2 is that it is usually based on technological breakthroughs or new applications. There may be multiple competing technologies. Both the ACT products and LINE-1 can be seen as technological breakthroughs. Interestingly, they could be viewed as technologies competing with each other in certain applications. Depending on the PBX, ACT-II can perform many LINE-1 functions and vice-versa. Conceivably, other competing technologies could be developed, perhaps even at the level of the telephone set by developing an intelligent telephone answering machine with tone detection and interpretation capabilities.

FIGURE 5.3

CLASSIFICATION OF COMPETITIVE STRATEGIC POSITIONS

DOMINANT	●	CONTROLS BEHAVIOR AND/OR STRATEGIES OF OTHER COMPETITORS
	●	CAN CHOOSE FROM WIDEST RANGE OF STRATEGIC OPTIONS, INDEPENDENT OF COMPETITORS' ACTIONS
STRONG	●	CAN TAKE INDEPENDENT STANCE OR ACTION WITHOUT ENDANGERING LONG-TERM POSITION
	●	CAN GENERALLY MAINTAIN LONG-TERM POSITION IN THE FACE OF COMPETITORS' ACTIONS
FAVORABLE	●	HAS STRENGTHS WHICH ARE EXPLOITABLE WITH CERTAIN STRATEGIES IF INDUSTRY CONDITIONS ARE FAVORABLE
	●	HAS MORE THAN AVERAGE ABILITY TO IMPROVE POSITION
	●	IF IN A NICHE, HOLDS A COMMANDING POSITION RELATIVELY SECURE FROM ATTACK
TENABLE	●	HAS SUFFICIENT POTENTIAL AND/OR STRENGTHS TO WARRANT CONTINUATION IN BUSINESS
	●	MAY MAINTAIN POSITION WITH TACIT CONSENT OF DOMINANT COMPANY OR THE INDUSTRY IN GENERAL, BUT IS UNLIKELY TO SIGNIFICANTLY IMPROVE POSITION
	●	TENDS TO BE ONLY MARGINALLY PROFITABLE
	●	IF IN A NICHE, IS PROFITABLE, BUT CLEARLY VULNERABLE TO COMPETITORS' ACTIONS
WEAK	●	HAS CURRENTLY UNSATISFACTORY PERFORMANCE, BUT HAS STRENGTHS WHICH MAY LEAD TO IMPROVEMENT
	●	HAS MANY CHARACTERISTICS OF A BETTER POSITION, BUT SUFFERS FROM PAST MISTAKES OR CURRENT WEAKNESSES
	●	INHERENTLY SHORT-TERM POSITION; MUST CHANGE (UP OR OUT)
NONVIABLE	●	HAS CURRENTLY UNSATISFACTORY PERFORMANCE AND FEW, IF ANY, STRENGTHS WHICH MAY LEAD TO IMPROVEMENT (MAY TAKE YEARS TO DIE)

- Overall demand for value added products and services could begin to increase as market awareness increases and as new entrants appear on the scene. There may be some shift to value added markets by existing players as traditional telecommunications markets become saturated.

C. COMPETITIVE STRATEGIC POSITIONING

As defined in Figure 5.3, opposite, MTX could be seen as having a weak position. With the backing and cooperation of MTS, MTX's position in the market should be viewed as favorable. This position is characterized by:

- Strengths, including the product lines and possible distribution through MTS.

- Again, with the help of MTS and, if possible, the commitment of additional resources, MTX should be able to improve its position.

- Niche marketing, focussing on Manitoba and specific products which have little direct competition, would suggest a relatively strong position which, at least in the near term, is secure from attack.

In Manitoba, if MTS were to distribute one or more of the products, it could be described as dominant. In other markets alone, MTX's position could be described as weak. It is also possible that other entrants in other markets, e.g., PBX manufacturers in the U.S. could quickly become dominant.

D. KEY CONCLUSIONS FOR THIS NEW VENTURE: PRODUCTS, MARKETING, ORGANIZATION, FINANCIAL AND LEGAL

The conclusions are summarized under the headings: product, marketing, organization, financial and legal.

1. Product

- All products, including ACT-I, ACT-II and LINE-1, are successfully operational from a technical point of view. The need for FCC/DOC approval of the ACT products and the retrofitting of the LINE-1 cards do not present insurmountable barriers to success.

- User satisfaction with LINE-1 service appears to be high and there is typically a great deal of interest among sales prospects. There appear to be some human factor improvements required that could be addressed through developing a more human interface and through training. These improvements could decrease learning times and encourage use of more features.

- Although INET/MTX have a competitive lead time, other companies are well positioned to enter the market. Defense strategies could include rapid gains in market share and product enhancements. Enhancements should focus specifically on an improved human interface.

- The LINE-1 service shows more potential than either ACT-I and ACT-II. End-users require no special hardware of any type. While the service is not targeted to consumers, it is targeted to organizations with as few as two employees. It also provides features which could be attractive to the largest organizations. ACT-I and ACT-II, however, are equipment dependent. Both require an IBM PC or compatible, and a switchboard. ACT-I can operate with a small key system or PBX, while ACT-II requires a PBX with 3-way calling, and currently operates only on Mitel equipment.

2. Marketing

- * The original LINE-1 marketing plan, which relied totally on PARA for the distribution of the LINE-1 service, is not viable due to PARA's inability to meet the terms of its agreement. Alternate distribution methods are currently being pursued.

- * Virtually nothing has happened in terms of MTX's marketing of the LINE-1 service except a very limited trial with MTS. This trial is essentially an engineering trial and it is doubtful that it will provide any significant direction in terms of understanding user needs, developing sales methods, problem resolution or market acceptance that will not be shown by the INET marketing efforts in California. Other activities such as cooperative ventures with potential distributors, and developing sales methods, promotion methods, user support methods, etc. are, so far, non-existent.

- * While there has been more activity on the part of MTX with respect to the marketing of the ACT-I and ACT-II products, this effort has not been successful. Sales efforts have been sporadic, and the necessary infrastructure to support these efforts, e.g., a marketing plan, promotional campaigns, sales support, installation support, customer support including training, product definition (i.e., what it does and does not do) etc., does not adequately exist;

- * The LINE-1 marketing effort is under the direction of Robert Cezar's brother, Lorne Cezar, who is the CIL Vice-President of Sales. The sales effort consists of some advertising, a limited telemarketing effort (two employees) and direct sales by Lorne Cezar. Sales efforts are targeted directly to large user organizations and to potential distributors. While INET is meeting with some success, this level of effort is limited for a product launch of this type. The intent of the marketing effort, however, is to show success with limited resources which will, in turn, attract major distributors. Letters of interest have been obtained from a major trading company wishing to secure distribution rights for the Far East. The INET directors involved in this negotiation have stated a requirement for a commitment to $25 million in sales over three years. Apparently, interest has been expressed by at least one major U.S. Bell operating company.

* The overall conclusion, based on the risk analysis, is that the risk of failure with LINE-1 is less than the risk of failure with ACT. The LINE-1 service is potentially easier to sell than ACT-I or ACT-II. It is a subscription service currently being introduced at $19.50 per month, with a planned increase to $29.50 (U.S.) per month in November, 1986. This price represents a relatively low barrier to sales for potential subscribers who wish to evaluate the product. The ACT-I and ACT-II products are sold outright for approximately $1,300 and $3,500 (U.S.) (prices vary depending on options). The purchase decision could result in longer lead times and a greater sales effort, due to most companies internal approval procedures.

* Because the product and all the players, including CIL, INET and MTX, are virtually unknown in the market place, the lack of supplier credibility would again suggest that subscription sales would be easier than out-right purchases.

* Having said this, the sales of LINE-1 are not easy. The service is quite complex and requires a great deal of explanation before its applications are fully understood by the user. Current users did not appear to fully appreciate the system's capabilities. They typically use it for one or two applications of specific interest to them. This indicates that a more complete understanding of user

needs as input to product improvements and market positioning is required. The current strategy of targeting the sales effort to communications managers in large organizations addresses this problem to some extent. While these individuals may understand the concept, they may not fully understand the potential applications for users within their organizations. Large organizations also usually require more time in obtaining any new service because of internal approval procedures, etc. On the other hand, direct sales to small organizations are not cost-effective.

* Other barriers include lack of market awareness of the product. It must be explained, starting with the basics, each time a sales call is made. Because there is no market recognition, telemarketing efforts must focus on need identification (e.g., do your sales people use telephone credit cards frequently?) which can be difficult to do over the phone. The lack of market awareness of the supplier also inhibits receptivity. In most cases, the LINE-1 service requires that subscribers obtain new telephone numbers which may also be a hurdle to some users.

* Although new telephone numbers are not required with the ACT products, many of the same barriers to sales exist. As well, there are the price and equipment compatibility issues, as discussed above. These factors, together with the fact that there is less sales experience with respect to the ACT products, reinforce the conclusion that ACT-I and ACT-II will be harder to sell than LINE-1 and with a longer sales learning curve.

* As with any embryonic industry, there are few competitors at first; there is a marketing "window" between the time it is announced and the time that competitive products are produced. A slow start-up can provide valuable information to competitors about the product and about market demand and marketing

methods. If the product is successful and market share gains are not made quickly, the opportunity can be lost as competitors enter the market. The patents on the products do not necessarily provide protection. This suggests that an all-or-nothing approach is warranted, to some extent, in the marketing of these products. It seems unlikely that the ACT marketing efforts to date have been sufficient to attract much competitive interest. LINE-1 efforts are specifically intended to attract large distributors and a spin-off of this effort may have stimulated interest among competitors.

3. Organization

* Because of the current situation, MTX is not in a position to actively pursue the markets for the ACT and LINE-1 products. However, we feel that it does not have the organization or the resources to do so even if the current circumstances had not come about;

* The joint MTX/CIL subsidiary, CIL International Network (INET), is consolidated with CIL and is not in a strong position to market LINE-1. INET has no employees except for Robert Cezar (CEO/President) and J. Crugan (CFO/Secretary) who are part-time employees of INET and of CIL. Other personnel are loaned from CIL.

* The original INET business plan was dependent on the performance of the PARA Group Inc. With six employees and estimated sales of $2 million, it is perhaps not surprising that it was unable to meet its commitment of launching LINE-1 in 50 U.S. cities. PARA, in turn, was dependent on Telamarketing which has since gone out of business. Because MTX and INET have a weak strategic competitive position in the market, it makes sense to have a distributor or distributors who can market

LINE-1 to subscribers, perhaps telephone companies or other organizations with resources vastly superior to those of PARA.

4. Financial

- MTX paid $500,000 (U.S.) for the rights to the ACT-I and ACT-II products and $2,000,000 (U.S.) for 20% equity in International Networking (INET). The original forecasts for LINE-1 sales presented in October, 1985, have not been met. As 20% shareholder, MTX would have shared in profits of $2.6 million in 1986 and $11.3 million in 1987. The failure of INET to meet these expectations can be attributed to problems with PARA, although other problems such as failure to meet FCC/DOC approval also occurred. In the mean time, MTX has spent another $518,000 turnaround on R&D associated with the ACT products.

- Although revenue objectives were established for the LINE-1 service, there were no comparable or well documented objectives for the ACT-I and ACT-II products. As a result, it is impossible to establish whether or not objectives have been met, although sales to date have been negligible.

- Total INET assets, of which MTX is 20% owner, are valued at $1,787,335, according to the balance sheet dated August 31, 1986. This includes $1,109,170 in cash and a finished goods inventory valued at $360,819. Total liabilities are $187,581, of which $104,619 is taxes payable on the sale of ACT technology to MTX. The ending cash balance for August of $1,109,170 showed a net cash out-flow of $33,032 for the month. The balance sheet indicates that MTX's investment of $2,000,000 is currently worth about $200,000 or one-tenth the original investment. INET office facilities directly adjoin CIL facilities and include a boardroom, three enclosed offices, storage room/warehouse, and secretarial workstations.

- CIL, which owns 80% of the shares in INET, has shown a negative net worth for the past few years, ($165,000) in 1984 dropping to ($963,000) in 1985. This is seen as due to the termination of the company's sales of video recorders and its recent concentration on the LINE-1 service. A positive net worth is shown for 1986 because of the MTX investment in INET which is consolidated into CIL results.

- Given these results and the relative strength of MTX, it is surprising that it was not able to negotiate a greater share of equity in INET than 20%.

5. Legal

- Although MTX has a security agreement which provides an interest in INET assets, it expires November 27, 1986. While we recommend that MTX management go through the agreement clause by clause to ensure that all commitments have been met, discussions with MTX management suggest that they do not feel that there have been any shortcomings on the part of INET. The security interest can be subordinated to any institutional or commercial authority of the INET Board of Directors.

- The failure of PARA to perform is not a failure to perform on the part of INET, and will not permit any action under the security agreement. Action would have to be taken by INET which the Board of Directors apparently does not wish to do.

- PARA should be informed that they are in breach of their agreement. Otherwise, they may be in a position to sue for damages if LINE-1 is successfully marketed in the U.S.

- MTX should also document any shortcomings on the part of DIM if it intends to terminate that agreement, and again, formal notice should be given if they intend to drop DIM as a distributor. Although the original six month agreement has probably expired, DIM does have right of first refusal if MTX decides to appoint a distributor for another six months.

VI. STRATEGIC ALTERNATIVES

A. RECOMMENDED GOALS TO BE ACHIEVED

- Neither MTX nor INET are dominant players in the value-added telecommunications market, a market which can be described as a growth market. MTS is clearly a dominant force in Manitoba and a closer alignment with MTS in that market could provide credibility for the ACT and LINE-1 products.

- A primary objective for MTX in Canada and INET in the U.S., if their marketing efforts are to be successful, should be to attract the substantial investment required to meet the cash requirements of a new product launch.

- The most appropriate strategic goals for MTX which should be used to evaluate the strategic options available to it are as follows:

    - show successful performance in the market, including sales, penetration and market share;

    - attempt to improve its competitive strategic position and become more dominant in the market place; and,

    - given the background of MTX and its high visibility, another goal would be to minimize the financial risk of products not proving successful in the market place. Ongoing delays over approved business plans and failure of the products to attain a viable position in the market will greatly hinder MTX's credibility and its ability to pursue other opportunities.

FIGURE 6.1

ALTERNATIVE STRATEGIES AND TACTICS

1. Market All Products

Key Moves:

- Develop a turn-key capability for selling ACT to distributors
- Actively market ACT to potential distributors in Canada and the U.S.
- Support INET sales of LINE-1 in the U.S.
- Launch a LINE-1 market trial with paying customers in Manitoba
- Secure exclusive distribution rights for Canada
- If market trial is successful launch LINE-1 nationally
- Secure significant funding required for a national launch

2. Market ACT Only

Key Moves:

- Develop a turn-key capability for selling selling ACT to distributors
- Actively market ACT to potential customers in Canada and the U.S.
- Re-assess passive role with respect to LINE-1 if INET is successful

3. Market LINE-1 Only

Key Moves:

- Launch a market trial with MTS
- Secure exclusive distribution rights for Canada
- If market trial is successful, launch product
- Secure significant funding required for a national launch
- Negotiate a return of ACT to INET or a third party
- Sell ACT in Canada on a passive basis in support of LINE-1 sales

4. Passive Involvement

Key Moves:

- Continue as a shareholder in INET
- Negotiate a return of ACT to INET or a third party
- Minimize any further investment
- Re-assess passive role in LINE-1 if it proves successful

5. Active Withdrawal

Key Moves;

- Negotiate a return of of ACT to INET or to a third party
- Attempt to claim breach of contract and claim compensation under security agreement.
- Attempt to sell shares in INET

B. STRATEGIC ALTERNATIVES

A number of strategic alternatives exist for MTX which can be evaluated in terms of the extent to which they meet the goals outlined above. The five strategies which are the most viable are summarized in Figure 6.1 opposite, and are briefly described below.

Strategy 1, Market All Products. This strategy involves national and international marketing of ACT-I and II as well as marketing LINE-1 in Canada. This would require the development of a strong marketing program and organization for the ACT products. As indicated in Figure 6.1 a turn-key capability would be required so that distributors are provided with all the support required to sell the product. A turn-key operation implies that everything is in place, including advertising program, manuals, training for users and support personnel, and service and support procedures necessary to market the products. At the same time MTX would begin to build up its capability for marketing LINE-1 by establishing an initial market trial with MTS. The market trial would involve targeting a specific geographic area in MTS's territory and actively marketing the service to paying subscribers.

Strategy 2, Market ACT Only. This strategy would involve focussing MTX's resources on the ACT products. This would again involve the development of a strong marketing capability, including the development of a turn-key capability that would meet all the needs of potential distributors. MTX would have no further involvement in LINE-1 but would re-assess its passive role if INET was successful with LINE-1 in the U.S. MTX might also be able to negotiate a return of the LINE-1 distribution rights to INET; however, given that these rights are non-exclusive, MTX is not in a strong negotiating position.

FIGURE 6.2

ALTERNATIVE STRATEGIES AND KEY RESULTS

Strategic Goals	1. Market All Products	2. Market ACT Only	3. Market LINE-1 Only	4. Passive Involvement	5. Active Withdrawal
	Key Results:	Key Results:	Key Results:	Key Results:	Key Results:
• Market Performance	• Resources would not be focused. Current capabilities are not sufficient	• ACT presents a limited opportunity compared to LINE -1	• LINE-1 appears to present the best opportunity	• Reduces the chance of success of INET or other suppliers	• No chance of success
• Competitive Strategic Position	• Some success would be required. Chances might be lessened by over-taxing resource	• Position would not substantially improve without backing of a more dominant player	• A joint successful trial with MTS would greatly enhance credibility and position in Canada	• Does little to improve position unless resources are allocated to other product areas	• No improvement of MTX's position
• Financial Performance	• Risk of failure with ACT is high. Stretched resources could limit chance of success with LINE-1	• Maximum potential of $11 million in U.S. Cost of goods alone is $5.8 million U.S. Distribution costs could easily exceed the cost of goods due to sales, installation, customization, promotion, etc.	• A market trial would improve MTX's and INET's chances of success. MTX/MTS alone could recover its initial investment in 5 years with an average of between 5-10 thousand subscribers paying $29.50 U.S. per month	• MTX could stand to lose its initial investment if INET is not successful. Minumum royalty payment of $300 thousand for ACT due in 1989	• MTX may be able to recover about 10% of its initial involvement

Strategy 3, Market LINE-1 Only. This would involve putting ACT "on the backburner" or selling the rights to ACT and focussing on LINE-1. This would mean a closer liaison with INET in the development of sales tools, etc. and the launch of a market trial with MTS in Manitoba.

Strategy 4, Passive Involvement. MTX would continue as a shareholder in INET, but would limit any further involvement. Again, ACT would be put on hold or the rights sold back to INET or a third party. MTX would reassess its involvement by exercising its rights to the Canadian market if INET is successful.

Strategy 5, Active Withdrawal. MTX would pull out of its business arrangements with INET. The ACT technology would be sold back to INET or a third party. MTX could attempt to show that INET was in breach of some aspect of the security agreement and claim compensation. Alternatively, MTX could attempt to sell its shares of INET.

C. EVALUATION OF OPTIONAL STRATEGIES

The key results which could be anticipated from each of the strategic alternatives are shown in Figure 6.2. The best strategy in terms of meeting MTX's goals is to market LINE-1 only. As discussed in the risk analysis, the risks of failure are higher with the ACT products. The major concerns are that MTX does not have a track record in marketing this type of product and would likely have little support from potential distribution channels. One approach would be to negotiate the return of ACT to INET or the sale of the rights to some third party. Another approach would be that taken by Optimum in the marketing of the Opcom XL 150; AT&T appears to have complete distribution rights and provides all product support. By establishing this type of arrangement with a dominant player, MTX would minimize its risk and involvement. Essentially, involvement would be limited to R&D on the product to develop improvements and service enhancements. If MTX remains involved with ACT at any level, we strongly suggest a re-evaluation of

pricing policies. The XL-150 for example, sells for about $13,000 U.S. compared to $3,500.00 U.S. for ACT-II.

With the finite market for the ACT products, a strategy which trades off rapid penetration for higher margins is reasonable. Also, it is easier to lower prices, if necessary, than to raise them.

The market for LINE-1 has more potential and less risk. The problems of appropriate distribution channels do not exist if the product is launched initially with MTS in Manitoba. By conducting a phased approach, consisting of a market trial following the current engineering trial, the risks will be minimized. The market trial, if successful, will also prove to potential distributors in other markets that demand exists. Winnipeg is well known as an ideal test market. It will also provide valuable information, if the appropriate evaluation methods are used, regarding product improvements and marketing methods. If the trial is successful, it will also provide valuable support to INET's efforts in the U.S. and will put MTX in a strong position to negotiate potential joint ventures for a national roll-out in Canada.

One key move would, of course, be to secure exclusive distribution rights for LINE-1 in Canada. Although a detailed business plan should be worked out, the following are norms for expenses in the high tech industry;

Item	Percent of Gross Revenue
Marketing	40%
Administration	20%
Manufacturing	15%
R & D	10%
Profit before taxes	15%

If the subscription rate to the end user is $29.50 per month, the profit before taxes would be 15%, i.e., $4.43 per subscription per month.

FIGURE 6.3

MTS EVALUATION CRITERIA

MTS Strategic Goals	1. Market All Products	2. Market ACT Only	3. Market LINE-1 Only	4. Passive Involvement	5. Active Withdrawal
• Contribution to regulated operations	• Exposure may increase if ACT is not successful	• The current business case does not look profitable	• Potential is greater. MTX efforts would benefit INET. Sales of a LINE-1 type product by a competitive vendor would hurt MTS revenues	• Only if INET is successful. INET maybe at greater risk without MTS support	• Possible recovery of 10% initial investment
• Development of telecommunications expertise in Manitoba	• Future opportunities may be limited if success is not achieved	• Failure of ACT could limit other possibilities	• Possibility of additional technology transfer from INET	• No	• No
• Create employment in Manitoba	• Additional employment will be at risk if an acceptable return is not achieved	• Even success of current plans would not create significant employment	• Success could protect current employment and add employment in manufacturing, marketing and distribution	• No	• No

Assuming the original investment is equivalent to $2,760,000 in Canadian funds, with a desired 5 year investment recovery, ($46,000 per month or 1.6%) an average of 10,383 subscribers per month would be required. By setting objectives which lower expenditures on marketing and on administration by a total of 15%, the resulting profit before taxes would result in a requirement of 5,198 subscribers, on average, per month. Of course, the success of INETs LINE-1 sales effort would also provide additional revenue to MTX.

One thing that these guidelines point out is that MTX, if it decides to market LINE-1, should pursue arrangements that are more favorable than those agreed to by PARA. Product manufacturing costs, according to the above norms, are 15% which, given a subscription price of $29.50 per month, is $4.43 per subscriber per month. The PARA deal proposed 20% payment in royalties, i.e., $5.90 per month. In addition, $21.00 per board per month was required to finance the hardware. Assuming 4.6 users, on average, per board, this would be an additional $4.60 per month per subscriber. This would result in a total cost of goods of $10.50 per subscriber per month which is over 32% of revenue.

Figure 6.3 assesses the strategies from the point of view of MTS's objectives in establishing MTX. Clearly, the passive involvement and active withdrawal scenarios do not meet these objectives. Because of the higher risk associated with the ACT products, the strategies of marketing ACT only or marketing all products may not produce the desired results. Again, placing the focus on the marketing of LINE-1 is most likely to result in MTS's goals, as well as those of MTX, being met.

D. CONCLUDING RECOMMENDATIONS

The chances are negligible of any substantial recovery of the investment by terminating involvement with CIL/INET at this time. Marketing the ACT products is a relatively high risk venture compared to LINE-1, and the current pricing strategy relative to costs is not profitable. The strategy most likely to meet the goals of MTX/MTS is the support of INET's LINE-1 sales and the marketing of LINE-1 by MTX in Canada.

The key moves associated with this strategy include:

- Preliminary business planning. A first step should be to conduct a study to develop estimates of the market potential, including the identification of different types of users, target organizations and the identification and use of appropriate forecasting models (e.g., diffusion of innovation). In conjunction with this research, a business plan should be developed for the marketing of LINE-1 in Canada.

- A market trial with MTS would be designed to objectively evaluate the resulting hypotheses, i.e., do the target users subscribe and pay for the service? While the preliminary research would assist in the design of the trial, one possibility would be to identify a number of organizations which would be representative of the target user population. An objective would then be to arrange the trial as a cooperative venture with a selected number of organizations. As part of a product launch, a business plan would be updated and would show the sale of subscriptions to the trial organizations as a first step in the product launch. We would estimate the cost of the initial marketing study to be approximately $30,000.00. Additional research would be required to assess the trial in terms of user acceptance, market positioning, etc. Internal documentation shows that a trial was proposed within MTS with a budget of $182,000 which, presumably, included this type of evaluation research. Later documentation shows approval to proceed with a trial at a cost of $34,000. It is uncertain what this scaled down trial would include, but it is doubtful that any accurate reading of market needs or acceptance would be achieved. Conducting the trial on a joint venture basis with user organizations would be an alternative approach to reducing costs.

- Secure exclusive distribution rights for Canada. As discussed previously, a target for this agreement should not be more than 15% of gross revenue for royalty payments and hardware leasing/manufacturing.

- Negotiate a return of the ACT distribution and/or technology rights to INET or to some third party. Other alternatives might be to arrange a distribution agreement with a major distributor who could provide all product support. MTX would restrict itself to product R&D. If sales of LINE-1 are realized, another longer term option would be to sell ACT through LINE-1 distributors in support of LINE-1 sales, e.g., targeting customers who have a need for both ACT and LINE-1 functionality.

- If the market trial is successful, the next key moves would include finalizing the business plan and securing the necessary financing for a full scale launch. At the same time, joint ventures, e.g., with other members of Telecom, would be identified for a national launch.

Overall, this strategy will require a close alignment of MTX with MTS. Management of the project should be assigned to an individual with a track record in launching this type of product. We suggest that the current MTX resources devoted to the ACT products should be re-assigned to the LINE-1 project. Additional MTS resources will, of course, be required. MTX management should assign to one individual the responsibility of concluding an arrangement for the ACT technology.

APPENDIX I

USER INTERVIEWS

USER INTERVIEWS

Although there are very few users of any of the products, a handful were identified and interviews conducted.

A. ACT

- Receptionist She felt the system worked well. The main advantage was that she could keep track of people as she said -"at her finger tips". She could up-date employees' locations or they could do it themselves, using a touch-tone phone. The messaging component was seen as very attractive and the system was configured with a small printer capable of printing two copies of each message. While people were reluctant to up-date their locations when the system was first installed, she said they were starting to do so more frequently. Overall, she had come to depend on the system as "the messaging is very good and you always know what is going on". The receptionist enjoyed being able to use the word processor on the IBM PC while ACT continued to work in the background. She also thought the system was easy to use. One disadvantage was the amount of equipment involved. At her work station, she had the message printer, a letter quality printer, the IBM PC and the switchboard (Mitel SX 100). The ACT System itself was hidden. The system had recently been upgraded to ACT-II functionality. Of the twenty people in the office, only eight engineers were using the call-forwarding capability, i.e., giving out locator codes to callers. These engineers were called quite frequently by external engineers and installers, and they received personal calls.

  She said the engineers were using it as the organization had a number of locations and the system permitted them to update their location and obtain their calls automatically. The sales people did not use the system. She pointed out that they did not have long-standing customers. Sales would consist of a product sale and installation, and then moving on to the next customer. The sales people did not want to be disturbed while on a customer's premises.

Asked about the reporting component of the system, e.g., call-tracking and call-reporting, she said she was aware of this capability, but it was not used. It should be noted that current versions of this system do not permit call-duration tracking.

B. LINE-1

These interviews were conducted with five of the fifteen paying subscribers on the Sunnyvale system as of October 8, 1986. All sales were made in conjunction with a voice/mail service.

* Management Consultant He had subscribed to the service since early July, 1986, and uses it primarily to keep in contact with his clients in the Sunnyvale area when he is travelling. He felt it kept his calling cost down because he could do local calling out of the LINE-1 hub without having to re-dial each time, eliminating the need for additional credit card calls. He used all the features except call screening because he said he wanted to receive all his calls. He had not experienced any problems with the service, but did indicate that he thought it would be useful to have a telephone set with a visual display so that numbers could be checked before being input.

* Engineering Sales Consultant He had subscribed to the service for four weeks and said he was very enthusiastic about it. This individual said the feature he liked the most was its ability to track him down as he is on the move all the time. He also liked having the voice/mail service. He had not yet used the other features. Asked if he thought it was worth $19.50 per month for the LINE-1 service, he said it definitely was, especially when he is busy. There were some problems with the voice/mail and he said he did not understand how to use LINE-1 at first. His training consisted of a trip to INET's office where he was shown how to use the system and a subsequent follow-up visit from an INET representative.

- Restaurant Owner This person had been a subscriber for just over one month and said that he used it for personal and business reasons. Previously he had depended on waitresses to take his calls, but they did not always remember to give him the messages. He said he had always had problems with people reaching him before he subscribed and said he was "simply amazed" by LINE-1.

  He appeared to change his location frequently as initial attempts to reach him resulted in calls being transferred to his restaurant and a country club before he was finally reached at his house. The interviewer did not wish to leave a message on his voice mail service. Asked if he used other features besides remote call-forwarding, he mentioned multiple calls from pay phones. He seemed somewhat uncertain about other service features. For example, when asked specifically about line reversal, he said it was unclear to him how it worked. He said he made two or three trips to CIL INET to be shown how to use LINE-1

- Restaurant Owner This man was pleased with the service and had not had any problems with LINE-1 which, he said, surprised him as he had experienced numerous problems with communication services in the past. He had used a number of the features, but did not have a chance to elaborate because the interview was interrupted. A receptionist introduced him to the service when he called CIL and he happened to ask what the tones were that he had heard before she answered (the system defaults to a receptionist, mail box etc. if there is no answer). Robert Cezar gave him a demonstration.

- Part-time Bartender He thought the service was beneficial because it eliminated the need to deposit additional coins for multiple calls using a public telephone and the need to obtain multiple calling card authorizations. He also thought the call-forwarding feature "was great" event though he did not receive many phone calls. He had only had the service for one month and had not yet tried all the features. This gentleman said that he definitely intended to renew his subscription and was surprised that it was offered for so little. Although he experienced no technical problems, it took him awhile to learn how to use it without making mistakes. He found the people at INET very helpful when he experienced difficulty and needed help.

APPENDIX II

ENGINEERING DESCRIPTION

APPENDIX II

ENGINEERING DESCRIPTION

The technology section of this report discusses the following areas:

A. Historical Background.
B. Overview of Technology and Equipment.

A. HISTORICAL BACKGROUND

In 1982, Robert Cezar developed a product which allowed telephone subscribers to play bingo at home through their touch-tone telephone. The subscriber communicated instructions to a bingo centre over a telephone connection. The tones produced by the touch tone telephone were decoded by a tone interpreter at the bingo centre. According to internal discussions, Mr. Cezar approached MTS because he felt that this product had good prospects in Manitoba. MTS decided to apply for a bingo license but was unable to obtain one and talks concerning this product ended. MTS, however, was impressed by the tone interpreter technology.

After this initial contact, MTS foresaw other applications for this technology. CIL and resources allocated by MTS worked together to create a product using the tone interpreter technology. Several products were considered and Mr. Cezar actually implemented some, although without long-term commercial success. Recent efforts have resulted in the ACT-I, ACT-II, and LINE-1 series of products.

B. OVERVIEW OF TECHNOLOGY

The three products ACT-I, ACT-II, and LINE-1 have the ability to decode tones, produced by a touch-tone telephone, by means of a tone interpreter. The tone interpreter consists of hardware and some integral software.

Tone detection technology is well known. Several designs exist as part of telecommunication equipment. Each hardware component of the MTX design is available from at least three suppliers.

Tone decoders are commonly used in telephony to decode the sixteen tone combinations produced by a touch-tone telephone. The MTX design, however, also interprets other audio conditions such as dial tone, busy tone, ring back and side tone changes caused by answer and on-hook. MTX also claims that the tolerance for tone discrimination had to be widened beyond that used in central office equipment. This was due to differences found among telecommunications equipment.

This use of tone interpreter technology suggests two concerns:

- Tone sequences, other than those used for regular dialing, are not standard. Although a few sequences will cover most cases, new or unforeseen sequences can be encountered. These exceptions may cause unexpected reactions from the system. The design team will try to make these products work. However, the market place will produce an unending stream of minor complaints. The causes of these malfunctions will be difficult to trace.

- Since the components used to manufacture the hardware are readily available, there is a danger that the product can be "reverse engineered" by new entrants or competitors. The time required for a competitor to "reverse engineer" the product is difficult to determine. However, MTX mentioned a manpower requirement of two person years.

The tone interpreter resides on a printed circuit board called a line card. Apart from the tone interpreting function, the line card is designed to signal the availability of decoded tone information to other hardware. Information such as Personal Identification Numbers (PIN), current extension numbers, and alternate extension numbers, are stored on hardware outside the line card.

A list of the equipment configuration for each of the products is as follows:

Equipment	ACT-I	ACT-II	LINE-1
Line cards	2	up to 16	up to 16
Card cage	no	yes	yes
Power supply	no	yes	yes
Control board	no	yes	yes
IBM-PC	yes	yes	no

Table 1: Summary of equipment configuration for each product.

ACT-I requires only an IBM-PC with two line cards to operate. Each line card is connected to a telephone line. The line card requests information concerning an individual from the IBM-PC.

ACT-II and LINE-1 require a card cage where up to sixteen line cards may be inserted. The card cage also contains an electrical power supply and a control board. The ACT-II and LINE-1 products store the information about an individual on the control board. ACT-II also stores the same information on the IBM-PC.

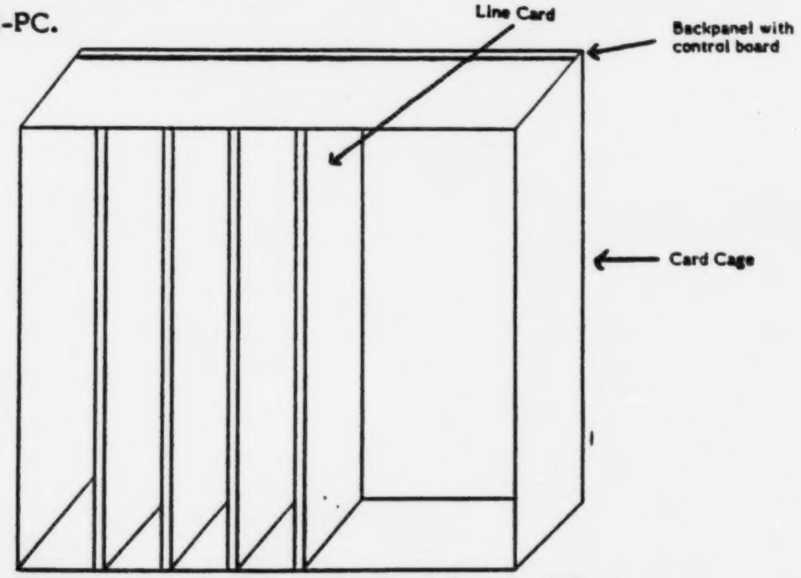


Figure 1: Card cage used in ACT-II and LINE-1.

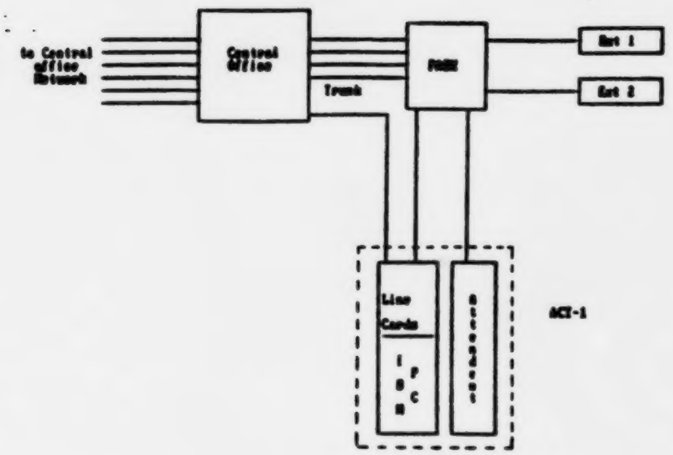

to Central office Network
Central Office
Trunk
PABX
Ext 1
Ext 2
Line Cards
I B M
P C
Attendant
ACT-I

Figure 2: Act-I system attendant and PC work together

1. ACT - Products

Following a connection to ACT by the user, the equipment causes the PABX to first supply a dial tone. ACT then sends commands to the PABX using touch tone digits. These are the same actions as those performed by an attendant or a subscriber on a standard telephone set. Since the PABX is unable to differentiate between ACT equipment and a standard telephone set, ACT allows end users to perform several call control and call forwarding features otherwise performed by the PABX attendant.

The major difference between the ACT-I and ACT-II products does not lie in the ability to decode tones but in the ability to act upon them. The following diagram illustrates the configuration of the systems:

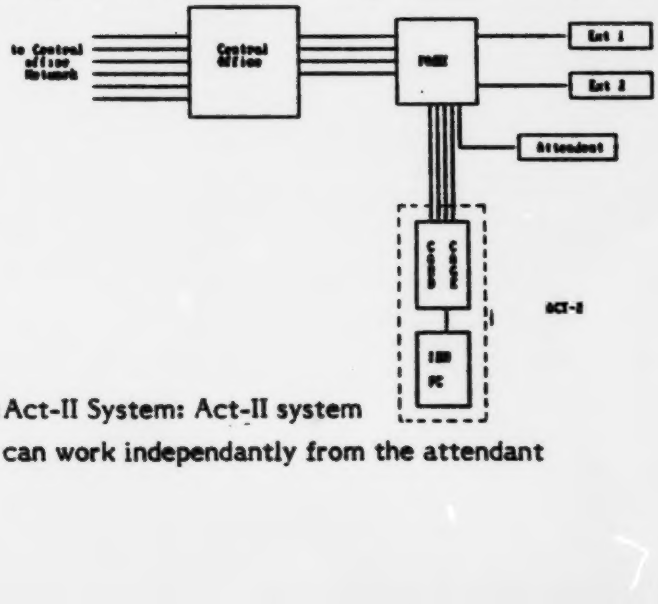

to Central office Network
Central Office
PABX
Ext 1
Ext 2
Attendant
IBM PC
ACT-II

Figure 3: Act-II System: Act-II system can work independantly from the attendant

When a caller accesses the ACT-II system, the caller can enter the personal locator number of the individual being called. The tones are interpreted by a line card which requests, from the control card and the IBM-PC, the current extension number where the individual called can be found. The caller is transferred to that extension, the telephone line to ACT-II is immediately dropped by the PABX, and ACT-II no longer has control over the call.

The ACT-I product differs from ACT-II in that it can receive but not send tones. ACT-I and ACT-II users may change the telephone number associated with their locator codes without assistance from the attendant. With ACT-I, however, all incoming calls must be answered and processed by the attendant. The attendant must ask the caller for the name of the individual being called and look for the individual's current telephone number on the IBM-PC. The attendant must then transfer the caller to that extension. In essence, the ACT-II product is ACT-I with the attendant function automated for those calls where the caller knows the locator code of the individual being called.

2. LINE-1

The LINE-1 product is similar to ACT-II. There are, however, some differences:

1. LINE-1 is configured to be operated by a service bureau. One system can serve many different and unrelated customers.

2. LINE-1 does not require an IBM-PC. All the user information is stored on the control board.

3. ACT-II drops the calling line after the caller is connected to the individual being called. LINE-1, on the other hand, provides services

which require that the connection between the caller, the user, and LINE-1 remain open. This ties up the LINE-1 equipment associated with a call for the duration of the call.

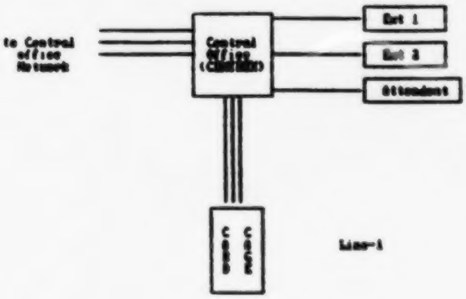


Figure 4: LINE-1 system works as a service bureau independently from the attendant.

3. User Commands

The procedures to use ACT-I and ACT-II are similar to those of LINE-1. For a list of features provided by each product, please refer to Table 2.

An example of a feature available is call forwarding. To change the extension were a user may be reached, several entries must be made. The sequence of actions is the same for ACT-I, ACT-II, and LINE-1:

- The user must access the system. If he/she is within the PABX, lifting the telephone can give the user access. If the user is outside the PABX or using LINE-1, the system must be dialed;

  i.e., enter 555-1234 (by user).

- The system responds with two consecutive tones of different pitch. This sound means that one has accessed the system. The user must then enter the four digit personal identification number (PIN) to access the command mode. This mode allows the user to change features unique to him/her;

  e.g., 9876 (by user).

- When the user has entered the PIN, the system responds with three short tones of the same pitch signaling that the user is in command model;

- The user can now enter commands. The command code for call forwarding is *1. The following sequence must be followed to enter the new extension number of the user:

i.e. *1 (to choose call forwarding);
0432 (all telephone calls to the user will be transferred to extension 0432)
No.: (the enter key)

Considerable complexity is involved in the preceding example. There are a large number of entries which must be made by the user in a precise sequence. If the user forgets either the steps or the sequence, the user will fail. The call forwarding feature is only one of several, all of which have their own unique steps and sequences.

There is also concern that an unsuspecting caller may phone a firm with the product. After dialing the telephone number, the following events take place:

- The caller listens to the phone ringing.

- The ringing stops and is followed by two short tones.

- The equipment waits in silence for tones (for a maximum of two or three seconds). Since the unsuspecting caller does not know that the system is waiting for tones, the caller is transferred to the attendant;

- The caller listens to the ringing of the attendant's telephone.

The caller may confuse these sounds for an indication that there is something wrong with the telephone equipment or for another type of signal. It is, therefore, not only important that the buyer of the equipment understand the product but that the general public be aware that the product exists.

Volume

3

MANAGEMENT AUDIT OF MTX

VOLUME III - REVIEW OF THE US SPRINT PROJECT

November 12, 1986

Submitted to: MTX MANAGEMENT AUDIT STEERING COMMITTEE

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MANAGEMENT AUDIT OF MTX

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EXECUTIVE SUMMARY

A. PRODUCT DESCRIPTION

The Total Network Management System (TNMS) is a computer-based surveillance, administration and control system that collects and graphically displays surveillance data from network entities and environmental sensors in order that operating personnel can manage and control their network. TNMS is a product intended to reduce the cost and improve the quality of managing the operation of large telecommunications networks.

TNMS is intended to be implemented at US SPRINT in two phases. Phase I will be a virtual copy of the TNMS installation which runs satisfactorily at MTS. In Phase II, the system is redeveloped to run on more modern computers to accommodate the management of a much larger and more sophisticated telecommunications network.

B. BACKGROUND AND STUDY OBJECTIVES

The primary purpose of reviewing the MTX business relationship with US SPRINT was to provide an assessment of project viability. Secondary objectives included:

- Analysis of the contractual and financial commitments with US SPRINT and with the key subcontractors, Digital Equipment Ltd. (DEC) and Microtel.

- Examination of project management, performance monitoring and budgets associated with the project.

- Assessment of the prospects and requirements for completing the technology and successfully concluding the project.

- Assesment of the overall attractiveness of the venture as an investment by MTX.

- Recommended actions to improve performance and reduce risks.

C. RELATIVE ATTRACTIVENESS OF THE TNMS SYSTEM

The successful sale of the Total Network Management System (TNMS) to US SPRINT represents a significant achievement for MTX. We believe this is largely due to the focused marketing effort and attractiveness of the MTS-developed TNMS technology. With the presence of major industry players such as AT&T and Northern Telecom, one must assume that the window of opportunity is probably about eighteen months. If MTX is to be successful in staking out a sustainable competitive position, it will need to secure at least two more large customer contracts while it completes the US SPRINT project.

With the exception of the risk of likely competitive response, which we judge to be high, the market-oriented risks are relatively low for US SPRINT since it appears that there is a market for the product and it builds on MTS's strengths. However, other risks noted below are far more significant.

D. CONTRACTUAL AND FINANCIAL COMMITMENTS

The initial contract signed with US SPRINT (formerly US Telecom) required MTX to provide a TNMS system which could monitor national networks and accommodate up to 800,000 alarm sources in a diverse, growing and dynamic environment.

In bidding on the US SPRINT contract, MTX assumed the role of prime contractor in a consortium effort. The US SPRINT project utilizes a combination of:

- MTS network administration application software;
- DEC computer hardware, system software and communications, hardware and software;
- Microtel alarm collection and processing software and some hardware; and
- TSB which has recently proposed to develop an interim solution for rapid deployment of some TNMS functionality.

Legal agreements, supporting schedules and related memoranda of understanding define the relationships between US SPRINT, MTX and its subcontractors. These have been under constant negotiation throughout the review and are being modified as of this date. The latest proposal to US SPRINT dated, October 31, 1986, affects all key agreements and is expected to be reviewed by all parties on November 7, in Vancouver. MTX anticipates that further contract revisions may result at that time.

The original financial terms and relative distribution of contract revenues have also undergone substantial revision for the following reasons:

- Initial under-estimation of project scope and complexity;
- Unbundling of Microtel alarm hardware from the original quote;

- Revisions in project scope and deliverables;
- Acquisition of internal development hardware;
- Changes in customer hardware configuration;
- Revised subcontractor price quotations.

The most recent financial division of gross revenue between MTX and its subcontractors is reported to be:

MTX (Including MTS&TSB)	$ 3.7 million	35%
Microtel	$ 5.1 million	50%
DEC	$ 1.5 million	15%
TOTAL	$10.3 million(Cdn)	100%

As prime contractor, MTX bears primary financial and contractual responsibility for the project.

E. CORPORATE OVERVIEW

Our review of project documentation, interviews and observations support findings described below:

- Although the three members of the US SPRINT consortium, MTX, DEC and Microtel, have variously planned to market TNMS in the US Telco marketplace for a number of years, MTX was finally able to capitalize on a sales lead provided by DEC. Nonetheless, MTX has not pursued a policy of premium or value added pricing, including no apparent mark-up on subcontractor fees.
- Microtel will be responsible for most of the new development work in Phase II. Because of the intricacies and

inter-dependencies of its relationship with Microtel, MTX must carefully manage the joint development project. If MTX is to achieve its business objectives, it is important that the long-term business relationship between MTX and Microtel support the ongoing technical contract arrangements.

- MTX, DEC and Microtel have the combined ability to become a significant competitor in the market for Network Facilities Management Systems (NFMS).

- Microtel and MTX are proven suppliers of TNMS components. The contribution that one makes to the other has been described as a strategic partnership which should be directed to completing Phase II of US SPRINT to the customer's satisfaction. They should continue to refine an acceptable future business relationship, and to move ahead and compete in the market as it develops. MTX must be careful to position itself to participate in the NFMS market in the most successful manner.

- The relationship with DEC is not entirely clear at the present time. We understand that cooperative marketing arrangements and negotiations are in progress between Microtel, MTX and DEC. DEC may be increasing its focus on certain specific industry markets.

- We have not been provided with a detailed project plan showing detailed task allocations, staffing, milestones and schedules. Estimating for the original bid on this project was extremely optimistic with respect to schedules and costs. This leaves MTX, as overall project manager, exposed.

In summary, the proper contractual arrangements, design authority and operational interfaces must be established between MTX and the other contractors if the project is to be completed with minimum technical risk. Primary exposure appears to be in the allocated roles, schedules, costs and management of the project and its linkages. Furthermore, integration test procedures need to be defined and the schedule for testing, error detection and retesting needs to be agreed.

F. KEY BUSINESS ISSUES FOR MTX

Current indications are that the contract with US SPRINT will not be profitable for MTX. However, the TNMS project does show future market potential, provided that product development and marketing are well managed.

G. STRATEGIC RECOMMENDATIONS

There are a limited number of options available to MTX as follows:

- Withdraw from the project.
- Assume a subcontractor role.
- Continue the leadership role.

Withdrawal from the US SPRINT contract is not indicated by the current situation. We recommend that MTX protect its long-term interests by continuing as prime contractor. It should evolve to a role as subcontractor for future projects in order to reduce its exposure, but continue to realize the potential benefits.

1. Short-term Steps

To be successful as the prime contractor for the US SPRINT project, MTX must exercise effective project management; in order of priority, it must:

- manage client expectations;
- manage the subcontractor relationship;
- manage the technical sub-projects and their linkages.

In particular, MTX must:

- Execute revised, unambiguous agreements with US SPRINT and the subcontractors.
- Improve the level of detail and accuracy in all project roles, performance plans, and delivery schedules, and gain free access to all detailed planning and progress reporting by all participants.
- Re-estimate costs and contract prices, and seek to receive adequate returns commensurate with levels of risk; alternatively, seek to minimize its performance exposure.
- Continue to actively support the marketing of TNMS to other prospective customers.

Overall, this strategy requires close alignment of MTX with its partners, as well as with MTS. Management of the project should be assigned to an individual with a proven track record in managing projects of this type. Currently, some aspects of this capability exist in a number of key management personnel. The additional skills could be obtained by secondment of an individual from member companies of Telecom Canada, MTX, or other external bodies. The entire project must have support and commitment from senior management of all participants in the project. Overall, it must be directed by strong, respected management or else significant losses will be incurred.

As prime contractor, the contract can affect MTX's strategic goals in several ways. Market performance will improve MTX's position as network operations and software experts. This will become more important as stronger market players appear. The MTS/MTX reputation and competitive position can be improved significantly with a successful US SPRINT project that is seen as a breakthrough contract. Follow-on sales are dependent upon initial success and maintaining strong supplier relationships.

2. Longer-term Moves

Once the US SPRINT project is in hand and stabilized, MTS/MTX should consider shifting their role from that of prime marketing partner for TNMS to one of subcontractor. However, prior to effecting any changes, MTX's corporate direction should be clarified and the implications of the changes assessed more fully.

I. PRODUCT DESCRIPTION

The MTX/US SPRINT project revolves around products intended to monitor alarm conditions on a telecommunications network and to allow telephone personnel to manage and react to these alarm conditions in a "real-time" environment. The products are referred to in most documentation as components of the Total Network Management System (TNMS).

A. BACKGROUND

US SPRINT is the product of a corporate merger announced in July, 1986, of US Telecom and GTE SPRINT, two large American telephone companies. AT&T and MCI are its main competitors. US Telecom's and GTE SPRINT's combined revenues for long-distance services in 1985 were $1.4 billion, a 3% share of the market. Revenues are expected to reach $5.5 billion by 1989, a 9% share of the market. US SPRINT plans to invest billions of dollars in capital improvements by 1989. US SPRINT operates in 28 countries, compared to 40 countries for MCI, and 135 for AT&T.

In October, 1985, US Telecom formally identified the need for a Network Facilities Management System (NFMS) to provide a complete surveillance and control capability necessary to manage its nationwide fiber optic network. The NFMS must accommodate vast numbers (800,000) of alarm sources, a highly diverse and growing network, and a significant growth rate. US Telecom views NFMS as a first step towards the implementation of a fully Integrated Network Facilities Maintenance System (INMS) to include switching and traffic management subsystems.

MTX was one of several firms invited to bid on the US Telecom's NFMS requirements. The Digital Equipment Corporation (DEC) introduced US Telecom to MTX, when DEC became aware that US Telecom was about to issue a request for proposal for a network facilities management system.

Other firms invited to bid included AT&T, Aydin, Burroughs, Datap, Digital Equipment Corporation (DEC), Ericsson, Fujitsu America Inc., Microtel, Northern Telecom, Rockwell International, and Sperry. In a joint bid with DEC and Microtel, MTX proposed the TNMS solution. The bid was successful.

Microtel, DEC and MTX agreed in the joint proposal presented to US Telecom that MTX would be the prime contractor. This decision was based on MTX's specific and practical network management expertise derived from developing, implementing and operating the successful TNMS for the Manitoba Telephone System. TNMS in Manitoba has been installed and operating at the Fort Rouge Provincial Services Control Centre (PSCC), in Winnipeg, since 1981.

The initial proposal to US Telecom dated November, 1985, quoted an estimate of $11.4 million U.S. for a complete TNMS configuration. This price included 2 remote terminal units (RTUs) for each of 200 sites, valued at approximately $7.6 million U.S. In subsequent negotiations with US Telecom, and at US Telecom's request, the IPUs were removed (unbundled) from deliberations leading to the signing of a final contract on May 28, 1986, valued at $3.5 million U.S.

MTX's proposed TNMS solution will be required to interface with equipment already installed at US Telecom and supplied by several of the firms invited to bid on the NFMS.

B. FUNCTIONAL OVERVIEW

The TNMS proposal to US Telecom is a computer-based surveillance, administration and control system that collects, time-tags, processes, archives, and graphically displays surveillance data from both analog and digital network entities as well as environmental sensors in order that operating personnel can effect real-time management and control over their network. TNMS provides various processing functions for the incoming network information and outgoing control signals, including a number of administrative functions. TNMS is a product intended to reduce the cost and improve the quality of managing the operations of large telecommunications networks. It utilizes a combination of:

- MTX applications software,
- DEC hardware, systems and communications software, and
- Microtel hardware, systems and applications software in a distributed processing environment.

DEC supplies and installs all computer-related hardware and provides its expertise in designing distributed information systems. It also supplies the communications, security and file handling software and communications gateways needed to accommodate the functional capabilities of TNMS.

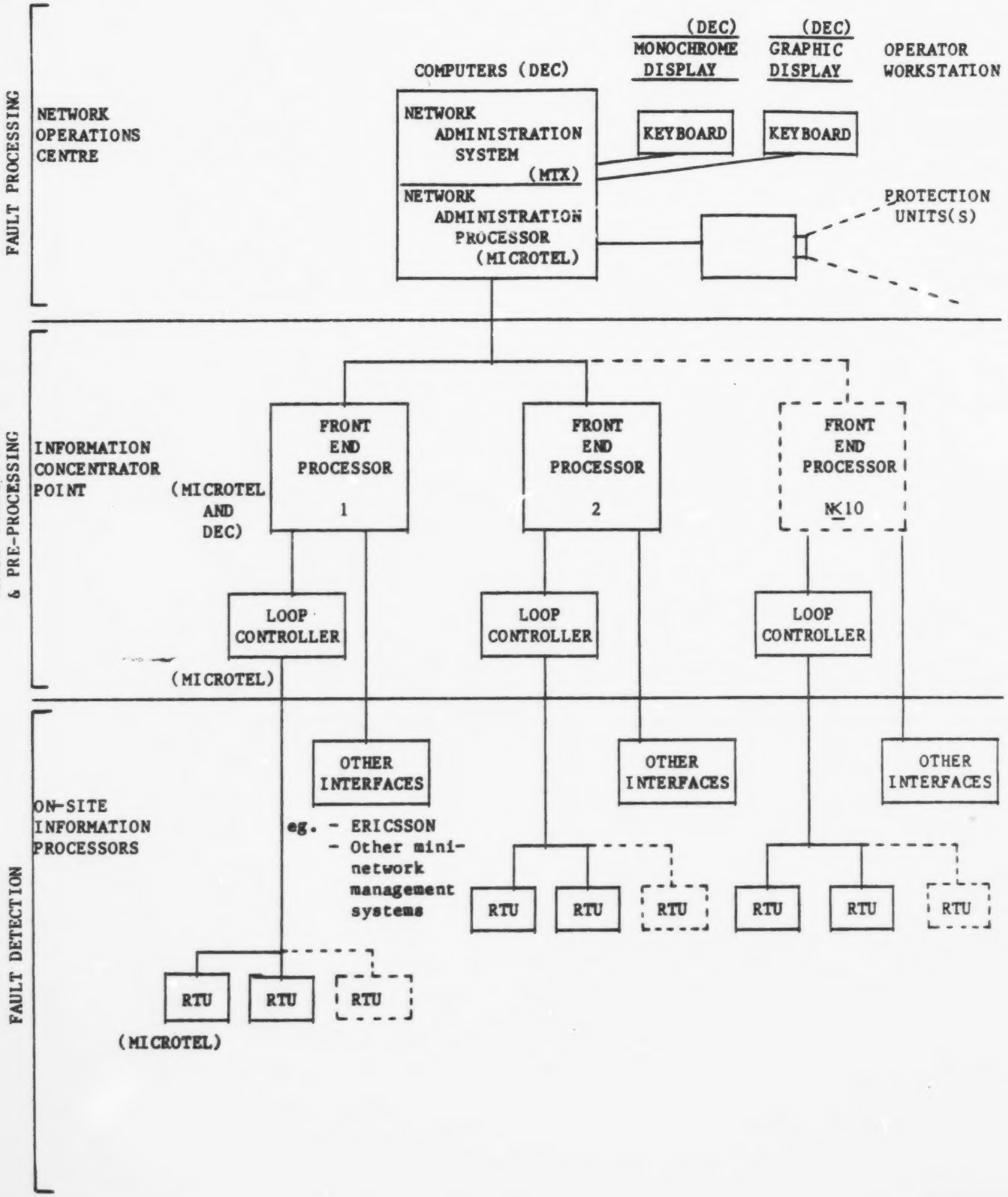
Microtel supplies and installs remote surveillance and control hardware and software and provides its expertise in designing network surveillance and control systems. These systems have the capability to collect and store network status information, carry out thresholding and implement controls to a transmission, switching and network environment (e.g., a diesel generator started from a remote location after a power failure).

What is more specific to the US Telecom project, Microtel is expected to supply the following components:

- The Remote Terminal Units (RTUS) that provide an interface to the network transmission systems and digital switches to collect alarm information.
- An interface to the Ericsson Fiber Optic Transmission System (FOTS), a surveillance system.
- The Front End Processors (FEPs), small computers with software which processes and concentrates information received from the RTUs, and other surveillance system interfaces described above, and which forwards this information to the main computer and application software known as the Network Administration Processor (NAP). It is intended that TNMS will support up to 10 FEPs.
- The Network Administration Processor (NAP), software which processes and displays the condensed information received from the FEPs. The NAP supports the work stations and other terminals located at the Network Operations Centre (NOC). Control commands from the work stations are processed in the NAP and transmitted

EXHIBIT 1

CONCEPTUAL VIEW OF THE TNMS PRODUCT CONFIGURATION


FAULT PROCESSING
NETWORK OPERATIONS CENTRE
COMPUTERS (DEC)
NETWORK ADMINISTRATION SYSTEM (MTX)
NETWORK ADMINISTRATION PROCESSOR (MICROTEL)
(DEC) MONOCHROME DISPLAY
(DEC) GRAPHIC DISPLAY
OPERATOR WORKSTATION
KEYBOARD
KEYBOARD
PROTECTION UNITS(S)
FAULT COLLECTION & PRE-PROCESSING
INFORMATION CONCENTRATOR POINT
(MICROTEL AND DEC)
FRONT END PROCESSOR 1
FRONT END PROCESSOR 2
FRONT END PROCESSOR N≤10
LOOP CONTROLLER
LOOP CONTROLLER
LOOP CONTROLLER
(MICROTEL)
FAULT DETECTION
ON-SITE INFORMATION PROCESSORS
OTHER INTERFACES
OTHER INTERFACES
OTHER INTERFACES
eg. - ERICSSON
- Other mini-network management systems
RTU
RTU
RTU
RTU
RTU
RTU
RTU
RTU
RTU
(MICROTEL)

through the FEPs and RTUs or system interfaces to the network elements under surveillance and control.

US SPRINT is responsible for supplying certain components which complete the total system deliverables. US SPRINT is required to:

- Make available a full technical description of the interface for the Ericsson FOTS, of a quality acceptable to Microtel.

- Provide transmission facilities to transfer data from the FEP to the Network Administration Processor over public or private, packet or dedicated lines using DECNET communications.

Exhibit 1 portrays a conceptual diagram of the TNMS product configuration.

C. PLANNED EVOLUTION

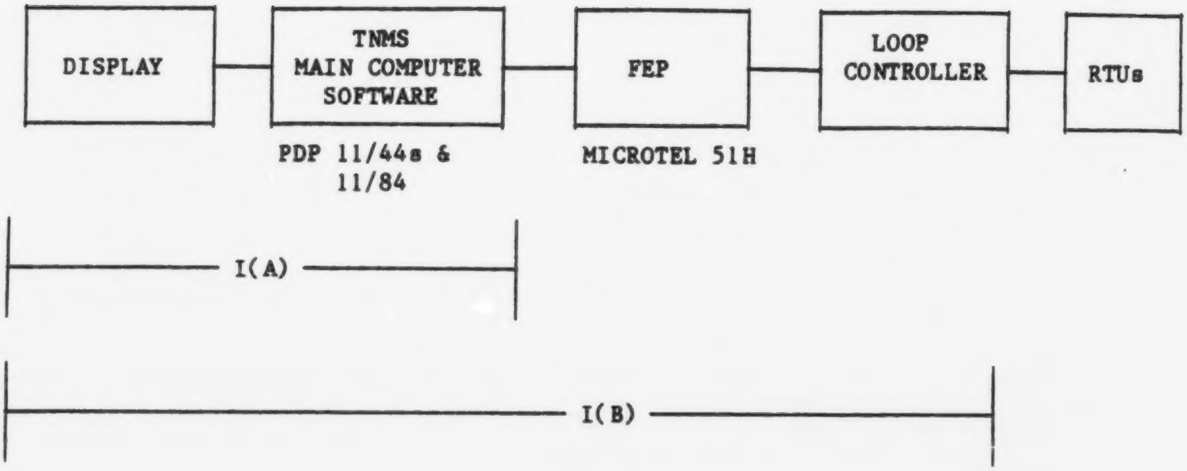
The TNMS product is to be implemented at US SPRINT in four phases: Phases I(A), I(B), II(A), and II(B). A schematic of the phases is included as Exhibit 2, over.

In Phase I(A), the present Manitoba Telephone System TNMS is implemented, using similar DEC computers at US SPRINT. The configuration and capability of TNMS at this point would be the same as was demonstrated to US Telecom representatives when they visited the Fort Rouge PSCC in Winnipeg on March 10, 1986. The following administration components from the PSCC would be included in the Phase I(A) implementation:

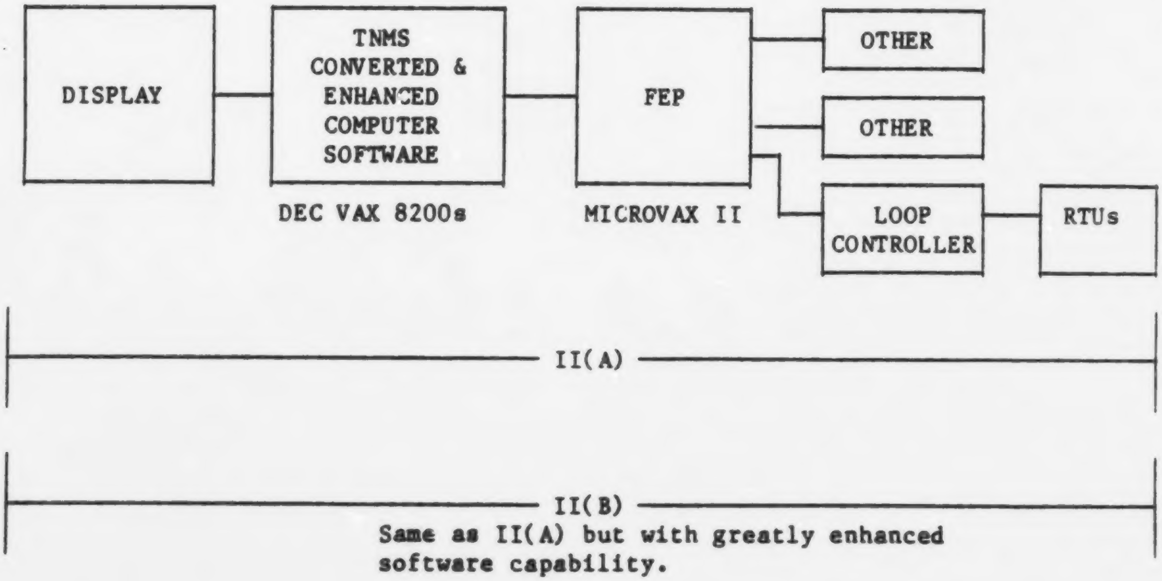
EXHIBIT 2

PLANNED EVOLUTION

PHASE I


DISPLAY
TNMS MAIN COMPUTER SOFTWARE
FEP
LOOP CONTROLLER
RTUs
PDP 11/44s & 11/84
MICROTEL 51H
I(A)
I(B)

PHASE II


DISPLAY
TNMS CONVERTED & ENHANCED COMPUTER SOFTWARE
FEP
OTHER
OTHER
LOOP CONTROLLER
RTUs
DEC VAX 8200s
MICROVAX II
II(A)
II(B)

Same as II(A) but with greatly enhanced software capability.

- Controlled Maintenance Plan.
- Site Activity Message.
- Automated Trouble Ticket.
- Graphics.
- Abnormal Condition Report.
- Failure Impact Tables and Reports.
- Pre-Plans.
- General Message System.
- Plant Communication Network.
- Logical Tables.
- Graphics using NAPLPS Standard.
- Conventional File Management (Non-database Management System).

The system would consist of two DEC PDP 11/44 and one PDP 11/84 computers. The two PDP 11/44 computers are intended to back each other up in the event either one fails. DEC will loan these two computers to US SPRINT free of charge. MTX is responsible for packing, shipping and installation costs.

The Phase I(A) implementation will allow US Telecom to familiarize itself with the current state of the TNMS product, to begin to train personnel, and to begin building the databases describing its network. Phase I(A) will not provide for the collection of real alarms or the processing of control commands.

Phase I(A) was targeted for delivery and installation by July 31, 1986.

In Phase I(B), the system will be expanded to collect alarms via the Microtel 51H Front End Processor and 51LC Loop Controller. The PDP computers, therefore, will be interfaced with the Microtel equipment. The following software enhancements will be installed on the system through the Microtel 51H alarm system.

- Basic Alarm Processing.
- Time Stamp and Synchronization.
- Thresholding.
- Basic Alarm Attribute Assignment.
- Basic Control Commands.

The hardware and software available in Phase I(B) should enable US SPRINT to survey and control transmission systems and digital switching systems with E2A or discrete alarm systems. Due to limitations of the 51H front-end processor, full capability to archive alarm messages will not be possible in Phase I(B).

Phase I(B) was targeted for delivery and installation by September 30, 1986.

In Phase II, the PSCC functions are migrated to more current cluster hardware technology and enhanced for marketability. The cluster technology allows for increased flexibility in accommodating growth in system and networking requirements.

In Phase II(A), the PDP computers will be replaced by two more modern DEC VAX computers. As with the design of the Phase I configuration, the second computer shapes the load on servicing all jobs and acts as a backup unit if the other computer fails.

Because the versions of the PASCAL computer language used in the PDP and VAX differ, a conversion of the TNMS programs will be required to migrate to the new computers. Also, a database management system will be used in the creation and update of data files. Phase II requires the system to accommodate all increases in the number of alarm points (from 32,000 to 800,000), an increase in the changes of state (COS) capacity, and improved man-machine interface.

The 51H FEPs would be replaced by DEC Microvax II microcomputers from Data General, although the software in these will continue to be Microtel software (but completely rewritten).

The following enhancements would be developed and added to the system:

- Basic Alarm History Logging.
- Ericsson FOTS Interface.

The following features, available in Phase I(B), would require re-writing or major conversion and, therefore, would not be ready in time for the Phase II(A) implementation:

- Controlled Maintenance Plan.
- Logical Table.

Phase II(A) was scheduled for delivery by January 31, 1987.

Phase II(B) contains all the features of Phase II(A) but also includes:

- Controlled Maintenance Plan.
- Logical Table.
- Enhanced Alarm Processing.
- Enhanced History Logging.
- Enhanced Alarm Attribute Assignment.
- Enhanced Control Commands.
- Customer Interface.

EXHIBIT 3

TNMS PRODUCT EVOLUTION OVERVIEW

CHARACTERISTICS	PHASE I(A)	PHASE I(B)	PHASE II(A)	PHASE II(B)
COMPUTER USED	PDP 11/44 & PDP 11/84	PDP 11/44 & PDP 11/84 DATA GENERAL 51H	VAX 8200 CLUSTER & MICRO VAX II	VAX 8200 CLUSTER & MICROVAX II
KEY FEATURES	SAME AS PSCC IN WINNIPEG WITHOUT ALARM COLLECTION AND CONTROL ACTIONS	SAME AS PSCC IN WINNIPEG WITH COLLECTION OF ALARMS & BASIC CONTROL COMMANDS	MIGRATION/CONVERSION TO MORE CURRENT TECHNOLOGY; SIMPLE ALARM COLLECTION AND CONTROL ACTIONS; SIGNIFICANT CAPACITY INCREASE FOR ALARMS AND ALARM CONDITIONS	ENHANCED ALARM PROCESSING AND CONTROL ACTIONS
BENEFITS TO U.S. TELECOM	PRODUCT FAMILIARIZATION; BASIC TRAINING; BUILDING OF NETWORK DATA BASE	SURVEY & CONTROL TRANSMISSION SYSTEMS AND DIGITAL SWITCHING SYSTEMS	BASIC ALARM HISTORY OF LOGGING; INTERFACE WITH ERICSSON EQUIPMENT; EXPANDED SURVEILLANCE CAPACITIES	COMPLETE SYSTEM INCLUDING CONNECTION WITH MAJOR SPRINT CUSTOMERS
ORIGINAL TARGET IMPLEMENTATION DATE	JULY 31/86	SEPTEMBER 30/86	JANUARY 5/87	JUNE 20/87

Phase II(B) was scheduled for delivery by June 20, 1987.

At the successful implementation of Phase II(B), MTX will have met its contractual obligations to US SPRINT.

Exhibit 3, opposite, provides a summary of the TNMS product evolution.

II. CURRENT PRODUCT STATUS

The project's current status can best be described under the following headings:

- Objectives
- Initial Decision
- Engineering and Development
- Financial Considerations
- Actual Performance Versus Plan

A. MTX OBJECTIVES

A number of objectives have been stated regarding the MTX involvement with DEC and Microtel on the US SPRINT project. MTX's objectives are to:

- Realize a profit on the US SPRINT project.

- Use the US SPRINT project as the means to penetrate and establish a permanent presence in the US market for its TNMS product.

- Increase its sales of TNMS through cooperative selling agreements with DEC and Microtel by utilizing Microtel's strengths in developing and manufacturing network monitoring and control systems, and by utilizing DEC's successful computer line and world-wide marketing distribution channels.

- Strategically position TNMS to meet the needs of the international telecommunications marketplace.
- Offer an investment-free solution to MTS to meet its future network management requirements.
- Advance the generic skills, knowledge, and technical capabilities of MTS computer staff that they may support more sophisticated and advanced telecommunications systems in the future.

Financial objectives are among the best documented and are described in agreements between MTX, DEC, and Microtel and in the joint bid to US Telecom. These financial arrangements are reviewed in more detail in Section IV. Through these arrangements, MTX originally hopes to realize a profit of $841,162 CDN on this project.

When we started the review, MTX management confirmed that neither a business plan nor a marketing strategy existed for TNMS. At our prompting, MTX prepared and delivered to us on Wednesday, October 1, a high-level mission, goals, and objectives statement regarding TNMS.

MTX sees its sale of the TNMS product to US SPRINT as a strategic opportunity to penetrate and establish a permanent presence in the US market. MTX believes that because of the 1984 breakup of AT&T and Bell, access to high technology network management products will be in greater demand by both the Regional Bell Operating Companies (RBOCs) (who relied on AT&T in the past) and the independent long distance carriers, such as US SPRINT, that were established to capitalize on the new deregulated markets. The competition among these companies is so keen that they are all anxious to implement new high technology strategies, including servicing the networks of major customers, within very short timeframes in order to gain a competitive edge. MTX stipulates that many, if not most, of the telephone companies in the United States need to upgrade their current network management systems and will be looking for network management system solutions such as TNMS. Four U.S. companies that have recently expressed an interest in the TNMS product are New York's NYNEX, Bell South, Ameritek and US West. Representatives from New York were in Winnipeg on Wednesday, September 24, to discuss the TNMS product with MTX officials. MTX officials visited Bell South in Atlanta on September 30, 1986. Representatives from Ameritek and US West are expected to visit Winnipeg shortly.

MTX believes that DEC and Microtel are equally excited about the market potential of TNMS, and that they want to enter into a joint marketing relationship with MTX to provide network facilities management system solutions to telephone companies in the United States and Canada. In so doing, they would be actively pursuing the sale of their computer systems. MTX would benefit from the reputation and the world-wide marketing infrastructure of the DEC organization, and from the high functionality of the Microtel remote sensing equipment. To this end, MTX is currently negotiating cooperative selling agreements with DEC and Microtel.

Another stated objective of MTX would be to use the US SPRINT project as a means to upgrade the technology that will eventually be required by MTS at its Fort Rouge PSCC. It is intended, therefore, that the US SPRINT commercial sales will cover the software development investment which will eventually be required in Manitoba.

B. INITIAL INVESTMENT DECISION

The factors leading up to the decision to proceed with the US SPRINT project are described below in chronological order. These are based on internal MTX documents and substantiated in an interview with Mr. Mike Bramwell, MTX Vice President of Marketing:

- In October 1985, US Telecom approached Mr. Harry Tankin, DEC's principal account representative in Boston, Massachusetts, to ask if DEC was aware of suppliers of network facilities management software. US Telecom made it known that they were about to issue a Request for Proposal.

- Mr. Tankin contacted Saul Siemaska, DEC account manager in Kansas City (headquarters of US Telecom), and advised him that MTX in Manitoba might have the software product required by US Telecom.

- Mr. Siemaska contacted MTX and arranged a meeting between MTX and US Telecom in Kansas City on October 23, 1985. MTX staff members Reg Ibison and Terry Duddridge attended.

- Following this meeting, MTX received a Request for Proposal from US Telecom, dated October 25, 1985.

- On October 31, 1985, Jon McGuire, MTS Corporate Counsel, was advised of the receipt of the RFP and asked for his comments.

- MTX staff J. Mavins and T. Duddridge attended a bidders' conference in Kansas City on November 8, 1985. (It should be noted that neither staff are currently involved in the US SPRINT project.)

- The proposal was prepared jointly by Terry Duddridge and one other MTX person.

- Mr. Bramwell discussed the proposal verbally with Mr. Don Plunkett, MTX President, and later, over lunch, with Mr. Glover Anderson. This was done prior to the proposal being issued to US Telecom.

- As far as can be verified, the Board never received a formal business case for MTX commitment and involvement specifically in the US SPRINT project, prior to the proposal issue and prior to DEC and Microtel participation in its preparation.

  A general MTX business plan overview was presented by Mr. Plunkett to the Board in June, 1985. Mr. Plunkett advised the Board in September, 1985, of negotiations with Microtel on joint U.S. marketing.

- The MTX response to the RFP was sent to US Telecom on November 20, 1985, with a covering letter signed by Wayne Wilson for MTX, Saul Siemaska for DEC, and a representative for Microtel.

- At its meeting of January 9, 1986, the MTX Board was advised of the US SPRINT joint bid and that this bid had assumed the lead position.

- A number of meetings followed with representatives of US Telecom, Digital and Microtel to discuss and negotiate technical issues, system requirements, various supplier responsibilities and contractual arrangements.

- On June 5, 1986, Mr. Plunkett provided the Board with briefing material on the project and advised the Board that the US Telecom contract was ready to sign. Board minutes relate that Mr. Plunkett advised the Board of an additional $1 million requirement to purchase a DEC VAX development system for TNMS so that the MTX design and development team has a captive TNMS complex available for its own use. He also indicated that conversion to Phase II would cost a further $540,000. The Board was told that, if Phase I was successful, it was highly likely MTX would be awarded the installation in Phase II, which would be very profitable. Several risks were identified, such as:

  - MTS's CIS Department being able to do the conversion within the time limits.

  - Hiring the right project manager.

  - Monitoring Microtel's deliverables with respect to software conversion.

  Mr. Plunkett felt that all these risks were manageable.

- The Board approved the signing of the contract with US Telecom. The Board also approved subcontracts with DEC and Microtel and the purchase lease of DEC hardware and software for the MTX development system.

- The contract with US Telecom was signed by US Telecom on June 10, 1986. The MTX subcontract with DEC to supply US Telecom was signed on July 15, 1986. The MTX subcontract with Microtel is still under negotiation, with major revisions being considered.

- MTX entered into a 36-month lease arrangement with 10% buyout option on its own VAX development system and purchased the required software.

- With the merger of US Telecom and GTE Sprint formalized in July, 1986, US SPRINT advised MTX by letter, dated July 23, 1986, that it wished to review the entire set of requirements specifications for this project, and requested that Phase II not proceed until the review of specifications is finalized. US SPRINT had assigned a new team to this project.

- US SPRINT submitted and signed-off on a revised set of technical specifications on September 24, 1986.

- MTX is required to return to US SPRINT with revised prices and delivery times corresponding to the new specifications. To this end, MTX is currently negotiating with DEC, Microtel, and US SPRINT.

C. ENGINEERING AND DEVELOPMENT

The computing equipment and the associated software for the Phase I system is virtually a copy of the installation which runs satisfactorily in the Winnipeg PSCC. We were told that the computing hardware has been delivered and that the software has been successfully loaded. Installation of the Microtel 51H Line Concentrator was progressing on schedule, but there was no firm commitment to a date for connecting this complex to alarm points in the field.

There is, in our view, no cause for worry about technical issues in the Phase I project. The customer may cause the machine to be commissioned later than MTX would wish, but otherwise we see no significant exposures.

The MTX SPRINT team has virtually the whole of Phase II engineering and development ahead of it. The starting point, a good technical specification, is now available and has been agreed to by the client. Although a more thorough definition of some features is needed, we are told that both the MTX team and the client recognize these deficiencies. In preparing a quotation, MTX will quote on the development of only those parts of the specification which they believe are sufficiently detailed.

The development job to be done for TNMS is primarily a software design task. Given the present intent of using a Microvax as the front-end processor (FEP) and a DEC VAX cluster as the central processing unit, along with Ethernet as the interconnecting media, hardware development should be minimal.

A new team has been put together to generate the required software. The MTX team numbers some twelve full-time individuals - two of whom have had some exposure to the development of the software complex now running in the PSCC. Four individuals are available part-time to the project team to provide database design and operating systems technical support. This team will be responsible for the overall system design and for the code which is resident in the VAX cluster.

The present design concept calls for Microvax which will face the sources of the alarms and serve as front-end processors for the central processing complex. It is generally accepted that the development of the software in the Microvax is a significantly larger task than the development of software in the central processing complex. Management's intention is to have Microtel write this code under subcontract to MTX.

Successful product design requires adequate performance by the team simultaneously on several fronts. On some fronts, the MTX SPRINT team is well positioned while, on others, major changes are required to reduce risk to acceptable levels. Our comments follow.

Project management has thought through the relevant issues on design functional testing, the need for field support, the need to control changes to the specifications and the design of guidelines for display strategies. Project management is at the very early stages of designing methods for the evaluation of the real time capacity of the design, the production of detailed milestones needed to drive a successful development effort and a strategy for the production of overview documentation.

It is clear to us that the design team must have available for its own use a captive TNMS complex consisting of at least a VAX and one Microvax. It is desirable that the MTX team have a second Microvax available and it is essential that the Microtel team have a pair of Microvax's available to it for the check out of its portion of the design. It is also desirable that the captive complex at MTX include at least one Line Concentrator along with at least one remote terminal unit. Furthermore, some provision must be made to simulate interfaces to each source of alarm information which TNMS agrees to support.

At the time of writing, there were seven major possible sources of difficulty for the technical success of this project. These are:

1) The design task was not appropriately sized to the available design team. Identified manpower numbered nine full-time development people whereas the original task target completion date was June, 1987, and was roughly estimated to require over ten person-years. Our impression is that no satisfactory system could be delivered in that time frame, regardless of the amount of money or numbers of people made available for the task. If this project is to proceed, a detailed milestone and staffing plan is the first requirement.

2) We were unable to identify a "system architect" for the project. This individual must understand the major issues of operating in a PSCC type of environment, software design techniques, hardware and software integration issues and real time computing. Furthermore, the architect must have some experience in the management of product designs. These designs must ensure that the system behaves well under crisis (e.g. where there are many simultaneous alarms), and that the alarm system behaves appropriately when the primary alarm detection system malfunctions. The behaviour of the detection system under these circumstances is seldom well documented and is largely unknown to the original system designers, let alone the secondary design team at MTX.

3) Modern switching machines are capable of presenting their alarm information as a binary stream. It is our view that the manufacturers of these switching machines will eventually provide sufficient information to third parties such as MTX to enable them to appropriately decode the stream and present the alarms through their systems. However, there could be considerable time delays in extracting the required information from the switching machine suppliers, and MTX delivery schedules should be made contingent upon timely receipt of the required interfacing information. A lot of extra work will be required by MTX during system design if this documentation is deficient.

4) The delineation of responsibilities between the MTX design team and the Microtel design team is far from clear. As a minimum requirement for success, this delineation must be made crystal clear, and a very good working relationship must be established between the two groups. As a subcontractor, Microtel must have a clearly defined deliverable for MTX. If Microtel has some use for its own purposes of part of this deliverable, internal responsibilities at Microtel for the MTX deliverable must be clearly defined. An alternate supplier to Microtel is only just recently being considered by MTX.

5) The large screen projection technology which US Telecom has requested is new to MTX. The manner in which this technology will be integrated within TNMS has yet to be resolved by MTX.

6) MTX has been made aware of performance and capacity limitations with the DEC computer configuration it

proposed to US Telecom. In fact, there will likely be other configuration issues MTX will face as it proceeds through the system design and development process. The configuration will have to be enlarged. The client may not be willing to pay the consequential additional costs.

7) This is the largest product design task undertaken to-date by the proposed management team. Its members probably need some assistance from outside the team on performing design reviews appropriate for this type and magnitude of design effort.

TNMS is not copyrighted or patented. While this would not offer complete legal protection against intentional disclosure, it does, in our opinion, establish the contention that TNMS is proprietary to its developers.

D. FINANCIAL CONSIDERATIONS

We prepared financial projections, shown as Exhibits 4, 5, 6 on the next three pages, to summarize the financial aspects of the original project. We have prepared these financial projections of the US SPRINT project which includes projected annual cash flow statements for each of the 36 months in the period ending June 30, 1989, from unaudited information and assumptions supplied to us. In order to prepare this projection, we have performed such tests of compilation as are considered necessary in the circumstances.

It is understood that the actual numbers will change to reflect changes in contract status. They are presented for

EXHIBIT 4

MTX/US SPRINT PRODUCT
STATEMENT OF INCOME (LOSS)
FOR THE 36 MONTH PERIOD ENDED JUNE 30, 1989
SHOWN BY U.S. AND CANADIAN DOLLARS
(UNAUDITED AS REFERRED TO ON PAGE 20 OF OUR REPORT)

	U.S. $		CDN. $	
REVENUE	$	% OF SALES	$	% OF SALES
Equipment / Software	3,516,349	82.95%	4,817,398	82.95%
Service	707,728	16.70%	969.587	16.70%
Software Lease	15,000	0.35%	20,550	0.35%
	4,239,077	100.00%	5,807,535	100.00%
COST OF GOODS SOLD				
Microtel Hardware & Software	1,316,281	31.05%	1,803,305	31.05%
DEC Hardware & Software	1,193,347	28.15%	1,634,885	28.15%
MTX Hardware & Software	355,735	8.39%	487,357	8.39%
Less: Hardware salvage value of 40%	0	0.00%	0	0.00%
Cost of Capital	65,693	1.55%	90,000	1.55%
	2,931,056	69.14%	4,015,547	69.14%
Gross Margin	1,308,021	30.86%	1,791,988	30.86%
EXPENSES				
Project Management				
Salary	158,438	3.74%	217,060	3.74%
Travel & Accomodation	76,120	1.80%	104,285	1.80%
Administrative	11,168	0.26%	15,300	0.26%
Miscellaneous	2,190	0.05%	3,000	0.05%
	247,916	5.85%	339,645	5.85%
Deferred Marketing Expense	44,812	1.06%	61,392	1.06%
Service (U.S. Sprint)				
MTX	48,384	1.14%	66,286	1.14%
DEC	272,290	6.42%	373,037	6.42%
	320,674	7.56%	439,323	7.56%
Service (MTX)				
Hardware & Software Maintenance	80,632	1.90%	110,466	1.90%
Net Profit	613,987	14.48%	841,162	14.48%

EXHIBIT 5

MTX/US SPRINT PRODUCT
STATEMENT OF INCOME (LOSS)
FOR THE 36 MONTH PERIOD ENDED JUNE 30, 1989
SHOWING MTX AND COOPERS & LYBRAND PLANNING ASSUMPTIONS
(UNAUDITED AS REFERRED TO ON PAGE 20 OF OUR REPORT)

	MTX		COOPERS & LYBRAND	
REVENUE	Cdn $	% OF SALES	Cdn $	% OF SALES
Equipment / Software	4,817,398	82.95%	4,817,398	82.95%
Service	969,587	16.70%	969,587	16.70%
Software Lease	20,550	0.35%	20,550	0.35%
	5,807,535	100.00%	5,807,535	100.00%
COST OF GOODS SOLD				
Microtel Hardware & Software	1,803,305	31.05%	1,803,305	31.05%
DEC Hardware & Software	1,634,885	28.15%	1,648,400	28.38%
MTX Hardware & Software	487,357	8.39%	1,462,071	25.18%
Less: Hardware salvage value of 40%	0	0.00%	(384,828)	-6.63%
Cost of Capital	90,000	1.55%	121,058	2.08%
	4,015,547	69.14%	4,650,006	80.07%
Gross Margin	1,791,988	30.86%	1,157,529	19.93%
EXPENSES				
Project Management				
Salary	217,060	3.74%	217,060	3.74%
Travel & Accomodation	104,285	1.80%	104,285	1.80%
Administrative	15,300	0.26%	15,300	0.26%
Miscellaneous	3,000	0.05%	3,000	0.05%
	339,645	5.85%	339,645	5.85%
Deferred Marketing Expense	61,392	1.06%	184,176	3.17%
Service (U.S. Sprint)				
MTX	66,286	1.14%	66,286	1.14%
DEC	373,037	6.42%	474,853	8.16%
	439,323	7.56%	541,139	9.32%
Service (MTX)				
Hardware & Software Maintenance	110,466	1.90%	110,466	1.90%
Net Profit	841,162	14.48%	(17,897)	-0.31%

P
FOR THE
(UNAUDITED

	JUN 1986	JUL 1986	AUG 1986	SEP 1986	OCT 1986	NOV 1986	DEC 1986	JAN 1987
BEGINNING CASH BALANCE	0	(165,504)	(192,287)	(219,070)	57,445	(378,144)	(250,940)	(75,812)
CASH RECEIPTS								
Equipment / Software	0	0	0	481,740	92,802	185,604	574,542	0
Service	17,302	17,302	17,302	68,100	68,100	68,100	68,100	68,100
Software Lease	1,370	1,370	1,370	1,370	1,370	1,370	1,370	1,370
	18,672	18,672	18,672	551,210	162,272	255,074	644,012	69,470
CASH AVAILABLE	18,672	(146,833)	(173,615)	332,140	219,717	(123,070)	393,072	(6,342)
CASH DISBURSEMENTS								
Microtel Hardware & Software	0	0	0	0	465,894	0	334,352	0
DEC Hardware & Software	0	0	0	0	0	0	0	137,367
MTI Hardware & Software	0	0	0	166,239	23,510	23,510	23,510	23,510
Less: Hardware salavage value	0	0	0	0	0	0	0	0
TMMS Development Costs	0	45,455	45,455	45,455	45,455	45,455	45,455	45,455
Project Management								
Salary	0	0	0	9,044	9,044	9,044	9,044	9,044
Travel & Accomodation	0	0	0	8,100	8,100	4,004	4,004	4,004
Administrative	0	0	0	638	638	638	638	638
Miscellaneous	0	0	0	125	125	125	125	125
Marketing Expenditure	184,176	0	0	0	0	0	0	0
Service (U.S. Sprint)								
MTI	0	0	0	5,524	5,524	5,524	5,524	5,524
DEC	0	0	0	39,571	39,571	39,571	39,571	39,571
Service (MTI)								
Hardware & Software Maintenance	0	0	0	0	0	0	6,662	6,662
	184,176	45,455	45,455	274,695	597,860	127,870	468,884	271,899
	(165,504)	(192,287)	(219,070)	57,445	(378,144)	(250,940)	(75,812)	(278,241)

EXHIBIT 6

MTX/US SPRINT PRODUCT
PROJECTED STATEMENT OF CASHFLOW
THE 36 MONTH PERIOD ENDED JUNE 30, 1989
ED AS REFERRED TO ON PAGE 20 OF OUR REPORT)

	FEB 1987	MAR 1987	APR 1987	MAY 1987	JUN 1987	JUL 1987	AUG 1987	SEP 1987	OCT 1987	NOV 1987	DEC 1987	JAN 1987 TO COMPLETION	TOTAL
812)	(278,241)	(480,670)	556,728	354,300	587,210	412,933	238,655	(104,554)	(236,862)	(369,171)	470,185	287,080	0
0	0	1,741,355	0	435,339	0	0	0	0	0	1,306,016	0	0	4,817,398
100	68,100	68,100	68,100	68,100	50,797	50,797	50,797	50,797	50,797	50,798	0	0	969,587
370	1,370	1,370	1,370	1,370	1,370	1,370	1,370	0	0	0	0	0	20,550
470	69,470	1,810,825	69,470	504,809	52,167	52,167	52,167	50,797	50,797	1,356,814	0	0	5,807,535
342)	(208,771)	1,330,156	626,198	859,108	639,377	465,099	290,822	(53,757)	(186,066)	987,644	470,185	287,080	5,807,535
0	0	501,529	0	0	0	0	167,176	0	0	334,353	0	0	1,803,305
,367	137,367	137,367	137,367	137,367	137,367	137,367	137,367	137,367	137,367	137,367	137,367	0	1,648,400
,510	23,510	23,510	23,510	23,510	23,510	23,510	23,510	23,510	23,510	23,510	23,510	564,241	1,083,130
0	0	0	0	0	0	0	0	0	0	0	0	(384,828)	(384,828)
,455	45,455	45,455	45,455	45,455	0	0	0	0	0	0	0	0	500,000
,044	9,044	9,044	9,044	9,044	9,044	9,044	9,044	9,044	9,044	9,044	9,044	72,353	217,060
,004	4,004	4,004	4,004	4,004	4,004	4,004	4,004	4,004	4,004	4,004	4,004	32,031	104,285
638	638	638	638	638	638	638	638	638	638	638	638	5,100	15,300
125	125	125	125	125	125	125	125	125	125	125	125	1,000	3,000
0	0	0	0	0	0	0	0	0	0	0	0	0	184,176
,524	5,524	5,524	5,524	5,524	5,524	5,524	5,524	0	0	0	0	0	66,286
,571	39,571	39,571	39,571	39,571	39,571	39,571	39,571	0	0	0	0	0	474,853
,662	6,662	6,662	6,662	6,662	6,662	6,662	8,418	8,418	8,418	8,418	8,418	15,080	110,466
,899	271,899	773,427	271,899	271,899	226,444	226,444	395,376	183,105	183,105	517,459	183,105	304,977	5,825,432
,241)	(480,670)	556,728	354,300	587,210	412,933	238,655	(104,554)	(236,862)	(369,171)	470,185	287,080	(17,897)	(17,897)

comparison purposes to illustrate the effects of different planning assumptions.

If events on this project do not develop in accordance with the assumptions made in compiling the model, the actual results achieved may vary significantly from the forecasted outcome. The projection should be evaluated in light of any events and changes in circumstances occurring after the date of this report.

This projection has been properly compiled to give effect to the assumptions set forth in the summary of significant projection assumptions included as Appendix I.

We offer the following general observations:

- MTX was late in its first billing to US SPRINT. Billings were approximately three months late due to accidental routing of the billing via Saudi Arabia instead of directly to US SPRINT, Kansas City, Kansas.

  The cost to MTX of this error should be measured in terms of three months' interest at 12% on the billed portion, amounting to approximately $14,450, as follows:

	$
Total installation	4,817,398
Billing of 10%	481,740
Interest @ 12% (3 months) on delinquent billing	14,450

- MTX assumes two additional sales on the development of the hardware and software in the next three years and, as such, is amortizing development costs over this time frame. This may be a reasonable marketing planning assumption, but to establish whether or not this specific project will realize a profit, we expensed the entire cost of marketing software and hardware development costs against the revenues of this project less 40% salvage value on the DEC equipment purchased by MTX. The increased cost of expensing these costs amounts to $712,670. Our findings suggest that MTX could break even on this original project, and may even realize a profit on enhancements, if the project staff, subcontract relationships and deliverables of the project are managed very tightly.

- Interest on initial cash deficiencies of the US SPRINT installation has not been added as a cost of the project.
- Costs to MTX resulting from US SPRINT delays, such as US SPRINT's review of specifications and contract renegotiations, are not recoverable by MTX.

We reviewed the project management costs to determine if these are reasonable estimates. We offer the following observations regarding these estimates:

- Project leader salary is covered by CIS, not included in the estimates as recoverable from MTX.
- In the event the project extends beyond nine months, as it undoubtedly will, these project management estimates will have to be increased accordingly.
- The salary of the associate project manager is not shown in the estimates.

MTX does not apply any markup to the Microtel or DEC goods and services sold to US Telecom.

At the time of writing this report, there is significant financial uncertainty over the draft contract between Microtel and MTX. With the revised specifications provided by US SPRINT, Microtel wishes to increase its original price from US $1.1 million to US $5.9 million. Its seems to have now reduced this amount to US $3.9 million and then to US $3.6 million.

Recovery by MTS of Costs Incurred Supporting MTX

We reviewed the arrangements made by MTS for recovering expenses incurred on the US Telecom project. These costs are described by D.A. McCaffrey, CIS Manager for MTS, in a memorandum sent on May 27, 1986, to S.G. Anderson, Executive Vice-President, and R.C. Vannevel, Vice-President, Corporate Services.

Based upon the information provided to us, we understand the cost recovery arrangements and practices to be as follows:

- MTS intends to pass on to MTX all expenses incurred by it. Some allowance is to be made for MTS overhead costs.
- Special accounts have been set up within MTS for tracking the costs of purchased goods or services.
- Internal costs are to be measured on a dedicated resource basis. Those project team members who were initially assigned full-time are considered fully committed to the project, and their total salaries have and will be charged to MTX.

- Four MTS staff assigned to work part-time on the project are considered to be engaged in work that will produce long-term benefits for MTS' other development undertakings. The costs of these staff members is to be absorbed by MTS and not MTX.

- No project staff time-reporting procedures were in use on October 16, 1986, when we inquired. However, staff informed us that the implementation of a timereporting system was being considered.

- When we interviewed senior MTS and MTX managers, discussions were just beginning on establishing a quarterly procedure for settlement by MTX of MTS - incurred costs. Apparently, an interim settlement was made in August, 1986.

In our opinion, more attention should be given to the recovery by MTS of costs incurred by it on the US SPRINT project. The arrangements made to date are inadequate. Specifically, we believe the following are required:

- Weekly time reporting for all MTS and MTX staff working on the project.

- A project work plan showing the assignment of all affected staff to each identified task.

- Monthly project reporting in which the work times spent by staff can be compared to those planned.

- More analysis to identify overhead expenses and establish suitable cost factors.

EXHIBIT 7

US SPRINT PROJECT PROGRESS

EVENT/ MILESTONE	ORIGINAL TARGET DATE	REVISED TARGET DATE	ACTUAL DELIVERY DATE
1. Contract Signed	-	-	June 10/86
2. Deliver Phase I(A)	July 31/86	-	August 1/86 (except Graphics & DT03 delivered a few weeks later)
3. Deliver Phase I(B)	September 30/86	-	September 29/86
4. Test & Accept Phase I	November 10/86	-	Awaiting Certificate of Acceptance
5. Revise & Finalize Requirements Specifications	July 15/85	August 8/86	September 24/85
6. Revise & Finalize Pricing & Delivery Dates	-	August 22/86	October 17/86
7. Re-sign Contract	-	September 5/86	Negotiation in Progress with Microtel, DEC, and US SPRINT
8. Deliver Phase II(A)	January 5/87	October 30/87	-
9. Deliver Phase II(B)	June 20/87	April 30/88	-
10. Test & Accept Phase II	September 30/87	To be rescheduled	-
11. Remove Phase I	September/87	To be rescheduled	-

- Monthly cost reporting and billing procedures.

The basis of sound project reporting and financial control is a detailed work plan. We believe this requirement should be addressed first. Without this, MTS will be unable to control the use of its resources on the project. Moreover, it will face difficulties in tracking and recovering associated costs.

E. ACTUAL PERFORMANCE VERSUS PLAN

The chart on the facing page contains a list of major events/milestones and the target and actual delivery dates for these milestones.

With the exception of some late deliveries of one or two hardware and software components, Phase I has been installed in Atlanta pretty much according to the original schedule. Although all of the Phase I deliverables have been met, at the time of writing, the system has not successfully received or processed a signal from a US SPRINT remote terminal unit. MTX and US SPRINT are working on this technical problem which involves adjusting the signal level of a Microtel 51RS unit so that it can be "picked up" by the Loop Controller which is not expected to be a major problem. MTX is awaiting a letter of acceptance for Phase I from US SPRINT by November 10, 1986.

The original Phase II project schedule will have to be revised because of technical changes requested by US SPRINT. These additional enhancements and changes are not yet complete. For example, the interface specifications to ERICSSON's fiber optic facilities have not yet been defined.

EXHIBIT 8

LIST OF MAJOR AGREEMENTS AND THEIR STATUS

		Status
1.	Hardware Purchase Agreement between MTX and US Telecom covering the purchase of TNMS hardware and software from MTX.	Signed by US Telecom June 10/86
2.	Software Licensing Agreement with Source Code Escrow between MTX and US Telecom for the TNMS product.	Signed by US Telecom Sept. 26/86
3.	Hardware and Software Maintenance Agreement between MTX and US Telecom.	Signed by US Telecom June 10/86
4.	Cooperative Selling Agreement between Digital Equipment Corporation and MTX.	Under Negotiation
5.	Memorandum of Understanding between MTX and Microtel modifying the original marketing agreement dated April 14, 1983 between the two firms.	Signed by Microtel March 7/85 Negotiating further refinements
6.	Supply and Support Agreement (Subcontract) between MTX and Digital Equipment Corporation covering the hardware, software, and service maintenance to be provided to US Telecom for this project.	Signed by DEC July 15/86
7.	Purchase Agreement (Subcontract) between MTX and Microtel covering the hardware, software and service/maintenance to be provided to US Telecom for this project.	Under Negotiation
8.	Letter Agreement between MTX and Digital covering the purchase of hardware and software to be delivered to MTS as the TNMS development system.	Signed by MTX June 5/86

MTX will require firm pricing and delivery dates from its subcontractors in order to modify its proposal to US SPRINT. It is our understanding that these are now being negotiated with subcontractors.

III. OVERVIEW OF BUSINESS AGREEMENTS

A number of business agreements were executed, or are still under negotiation, by MTX to satisfy the obligations to US SPRINT. A chart summarizing the major agreements involved in the US SPRINT project is shown in Exhibit 8, opposite. In summary, these agreements are as follows:

- U.S. SPRINT agreed to purchase the TNMS hardware and software product configuration from MTX, including maintenance, and to have the source code for the software placed under escrow.

- MTX purchased the DEC hardware, software and service for US Telecom, and acquired its own in-house development system from DEC.

- MTX is still negotiating the terms and conditions of the Microtel subcontract to supply the US Telecom project.

- MTX is negotiating a cooperative selling agreement with DEC and attempting to further strengthen and refine its marketing agreement with Microtel.

A. DISTRIBUTION AND MARKETING AGREEMENTS

MTX market analysis suggests that there are ever increasing external pressures being placed on telecommunications carriers to provide better levels of service while reducing costs and responding to greater competitive threats. These pressures are forcing carriers to assess the utilization, reliability, availability and costs of their networks and to evaluate methodologies for their optimization. The implementation of TNMS is seen by MTX as a solution towards this goal.

Cooperative Marketing Agreement

A stated MTX objective is to use the successful implementation of its network management system product at US SPRINT as the means to establish credibility for itself and its product in the US and international telecommunications markets. Given that the TNMS product is intended to operate on a DEC VAX computer system and use Microtel hardware and software, MTX has initiated cooperative selling agreements with DEC and Microtel intended to benefit all three parties by increasing each party's sale of its respective products. These agreements target the anticipated large demand for integrated network management systems, which some industry analysts believe is being brought about by the forced breakup of AT&T and Bell and by the result of emerging companies wanting to stay ahead of the competition.

The draft marketing agreement between MTX and DEC focuses upon three key elements for the proposed relationship.

- Cooperative selling of MTX's TNMS application software, and MTX's expertise in evaluating customer network management requirements, providing project management related to solution design, testing, and installation, and providing solution support.

- Semi-annual sessions focusing on product and product strategy updates, under non-disclosure, by MTX and DEC for those products/services relevant to network management systems.

- Semi-annual technology exchange forums allowing MTX and DEC engineering and marketing personnel to address common interests related to the convergence of computing communications technologies in the telephone industry.

The following terms of the MTX/DEC draft marketing agreement deserve special attention, as they introduce certain risks to MTX. The agreement:

- Applies to Canada and the United States only.

- Provides DEC, free-of-charge, with two complete copies of TNMS software and a world-wide non-exclusive, royalty-free licence to use and copy TNMS for the purpose of performance testing, demonstrations and sales promotions.

- Requires MTX to maintain its TNMS software current and operable with each new release of DEC's operating system and support software.

- Does not prevent DEC from developing, acquiring or marketing products similar to TNMS, but not supplied by MTX.

The obvious risks to MTX are that:

- Nothing prevents DEC from developing its own version of TNMS, based on the technology and ideas supplied to it by MTX, and going on its own to promote and market its product version internationally.
- MTX is forced to maintain its TNMS product, compatible with new releases of DEC's operating system and support software.

The term of the agreement is two years, allowing MTX to either opt out of the agreement at the end of two years or renegotiate the terms of the agreement. We believe that both parties are negotiating this agreement in good faith, but, for the sake of prevention, believe that MTX would be better served to address these risks before a final marketing agreement is signed.

A marketing agreement between MTX and Microtel for total network management products has existed since April 14, 1983. Both Microtel and MTX wished to further strengthen and define their relationship and, to that end, developed a memorandum of understanding, signed in March, 1985, updating their relationship.

The key elements of the revised MTX/Microtel marketing agreement are:

- Exclusive cooperative selling of MTX's network administration software and Microtel's System 51 equipment and software for alarm and surveillance of telecommunications networks.

- Technology information exchange between the parties.
- A definition of market areas (countries) where the agreement would not be binding (i.e., Canada, Saudi Arabia, and Lebanon).
- Sharing of profits where MTX is awarded a contract as a result of Microtel's efforts, even if no Microtel equipment is involved.
- Mutual agreement on the pricing and profit strategy prior to the submission of all proposals.
- On all proposals, either party may be the prime contractor depending on the nature of the client or project.

The 1983 agreement was signed for a 5-year term. The agreement provides for an additional 3 years after expiration when MTX or Microtel would have to compensate each party for sales generated by the other.

The exposures to MTX of the MTX/Microtel marketing agreement are that:

- Nothing prevents Microtel from developing its own version of TNMS, based on the technology and ideas supplied to it by MTX, and going on its own or exclusively with DEC to promote and market its version of the product. A strategic problem facing MTX is that at the end of the US SPRINT project, Microtel will have a product of its own, but MTX will have only part of a product.

- It appears that MTX would not be allowed to join with any other supplier of alarm and surveillance systems for its TNMS product until the current marketing agreement with Microtel expires.

We are told that MTX is currently negotiating the terms and conditions of an updated cooperative selling agreement with Microtel intended to strengthen the strategic partnership between the two firms. There have been differences, and even conflicts, in the corporate culture, experience, perceived roles and confidence in abilities between the two firms. At one point, Microtel has expressed a desire to be the prime design authority on this project because it has the largest amount of development to undertake. Microtel has taken the position that it should be the firm to develop graphics and all man-machine interface applications. Again, we suggest that any formalized agreement should adequately address MTX's areas of exposure, including a very clear definition of ongoing business relationships. In fact, all three parties should clarify their positions.

Prospects

Five North American telephone companies, learning of MTX's successful bid to US SPRINT, have expressed an interest in examining the TNMS product. These companies are Telecom Canada, NYNEX, Ameritek, US West and Bell South. NYNEX recently had representatives in Winnipeg visiting the PSCC and holding discussions with MTX officials. This visit follows a visit by MTX staff to NYNEX in New York. MTX officials, Messrs. Mike Bramwell and Reg Ibison visited Bell South on September 30, 1986.

B. CONTRACTUAL COMMITMENTS

This section of the report, prepared by the legal firm of Aikins, MacAulay & Thorvaldson, will review the contractual arrangements for the US SPRINT project and is organized under the following headings:

- Environmental Considerations.
- Commitments.
- Contract Review.

A more detailed assessment of the respective agreements is included as Appendix II.

1. Environmental Considerations

Jurisdiction:

- The various documents are said to be governed by different laws:

  US SPRINT - Kansas,
  Digital - Massachusetts, and
  Microtel - not specified except escrow in British Columbia.

- Our review is on the basis of the laws of Manitoba only.

Parties to the agreements:

- If any affiliates or subsidiaries of these parties are involved in the project, such affiliates or subsidiaries should be party to the applicable contract. Of particular concern are covenants to keep confidential the technology of the other parties.

- It is assumed that, by virtue of the merger, US SPRINT has assumed all contractual rights and obligations of US Telecom Inc.

- Our comments relate not only to signed contracts but also to drafts as amended to date, where indicated. Subsequent amendments may change our remarks.

- As the contracts themselves say that each supercedes all previous arrangements between the parties, we assume no contracts are relevant other than those reviewed.

The 1986 contracts appear to have been duly authorized by the directors of MTX, with specific authority to the President to sign.

Various inconsistencies occur in the contracts, and the contracts have either no provision or inadequate provision for reconciling any conflict.

The fact that contracts are not dated does not render the contract not enforceable.

Only some of the agreements contain a clause expressly stating that certain representatives and covenants will survive the termination of the contract. In particular, payment and nondisclosure obligations should be expressly continued.

Only the US SPRINT and Microtel Escrow Agreements contain arbitration provisions, and then only as to US SPRINT's right to claim release of the materials. The same expeditious resolution of other disputes is not available unless all parties to the particular contract agree to it. Failing agreement, any dispute must be resolved in the courts, with the potential expense and delay inherent in that.

2. Commitments

In revising its specifications, US SPRINT has sought amendment of the contract. The parties have not specified what further changes in deadlines and other items result from those changes. The contracts are not clear on the effect in the absence of express agreement.

Responsibility for repair or replacement depends upon what equipment is at fault. MTX is primarily liable under the US SPRINT agreements, and can claim against its subcontractors only to the extent that one can establish whose is the defective product.

The description of the obligations of US SPRINT in the Hardware Purchase Agreement lacks sufficient specifics.

MTS bears the risk with respect to:

- Equipment sold to US SPRINT to point of delivery.

- Products leased, loaned or licensed to US SPRINT for the duration of the arrangement.

If the system does not pass the acceptance tests, all parties are restored to their original positions except that as between MTX and Digital, and MTX and Microtel, MTX is potentially liable to the party not at fault if the contract is terminated.

Digital's undertakings regarding confidential information are severely restricted in scope and in time frame and afford MTX little protection.

MTX has no corresponding arrangement with Digital to allow escrow of Digital materials under the US SPRINT Escrow Agreement.

MTX has made several undertakings to US SPRINT regarding warranties and maintenance of the system for which MTX does not have corresponding covenants by Digital and Microtel:

e.g., deemed default for continuous defects,
e.g., parts available for five years,
e.g., scheduled preventative maintenance,and
e.g., specific limitations on warranty by
    subcontractors not claimed by MTX.

To the extent of the differences in the obligations undertaken by each party, MTX is potentially liable for ongoing costs or damages to US SPRINT in respect of the system.

The extent to which MTX has any recourse against Digital depends upon whether the product in question is leased, purchased or loaned as different terms apply to each. In respect of equipment leased or loaned, MTX is potentially liable both to US SPRINT and to Digital for damage to product or damage arising from its use.

Although the warranty periods given by MTX and by its subcontractors appear to coincide, the maintenance periods of Microtel are different, and of Digital, may be different.

The subcontract agreements purport to limit the remedies available by MTX against subcontractors beyond the limitations contemplated as between MTX and US SPRINT. E.g., on equipment purchased, limit of damages is $1,000.00, and as against Microtel, MTX is limited to the subcontract price.

US SPRINT makes no commitment other than payment in respect of leased equipment, but MTX assumes full responsibility to Digital for risk and upkeep.

US SPRINT is not expressly bound to deadlines on the project other than payment provisions.

In the US SPRINT Escrow Agreement, the Escrow Agent makes no nondisclosure covenant regarding the materials.

The contracts appear to render MTX liable to US SPRINT, and the subcontractors liable to MTX, for conforming to the standard of mean system availability set by the US SPRINT specifications.

MTX grants a purchase money security interest to Digital, although MTX has represented to US SPRINT that the system is free and clear of any such interests.

MTX has agreed with its subcontractors to pay certain costs in the event the equipment is moved, but has no right to recover these costs from US SPRINT.

In the draft marketing agreement with Digital, MTX is making substantial disclosures of technology to Digital without reciprocal covenants on Digital's part and without adequate nondisclosure covenants by Digital.

The marketing arrangement with Microtel is not reciprocal in several respects, including sharing of profits and restrictions on promoting the product outside of the arrangement.

MTX is responsible for cancellation charges to Digital on purchased equipment, but has no right to recover these from the other parties except as damages for breach of contract.

In the event of termination, MTX is liable under the Digital lease, whatever the circumstances, for all payments due during the term and expenses of repossession, although MTX's rights to recover such costs compared to US SPRINT or Microtel may be limited, depending upon the circumstances, such as if the termination is for failure to meet acceptance tests, or attributable to a cause not within the defaulting party's control.

3. Contract Review

We summarize the findings of the review of contracts in terms of the ambiguities and inconsistencies noted.

i) Ambiguities

In many instances, terms used in the contracts are either ambiguous as described or should be reviewed from a technical perspective to ensure that the definition is full and complete for the purposes of the contract, namely:

- The definition of "hardware" and/or "software" in each contract.
- The scope of confidential or proprietary information protected by the various covenants in the different agreements.
- Appendix H to the US SPRINT Hardware Purchase Agreement.
- Terms of the force majeure clause in 9.3 US SPRINT Hardware Purchase.
- Distinctions in subject matter in clauses 3 and 7 of Software Licence with US SPRINT.
- Calculation of credits on monthly maintenance charges for delay in response time.

ii) Other Ambiguities

The force majeure clauses of the US SPRINT contracts allow for indefinite delay in performance for causes beyond a party's control, but do not expressly excuse a party from liability for termination as a consequence of such circumstances.

iii) Inconsistencies

- In the manner of stating MTX warranties to US SPRINT.
- Not all covenants in the US SPRINT contracts are mutual or reciprocal.
- Default and cure provisions are not consistent among the various parties.
- Rights of termination and deemed default provisions are also not consistent.
- Cross termination provisions in the agreements do not exist, are in favour of one party only, or do not refer to all other agreements between the parties.
- The confidential or proprietary information covenants by US SPRINT are not consistent, and do not correspond to covenants made by the subcontractors.

- MTX covenants to mark Digital proprietary information as such, but US SPRINT makes no corresponding covenant.

- As to when title passes to US SPRINT under the hardware purchase.

- As between clauses 7 and 13 of the US SPRINT Software licence.

- As between notice requirements of clauses 1 and 6.3 of US SPRINT Maintenance Agreement.

- MTX requirement to obey US SPRINT personnel is not repeated by subcontractors.

- Requirements of MTX and of US SPRINT regarding site preparation and installation procedures for Digital equipment are not identical.

- Force majeure clauses among various agreements. In particular, such clauses in the Ditigal Agreements do not correspond with the US SPRINT contracts.

- Indemnities made by MTX in favour of US SPRINT are not made by Digital in favour of MTX.

IV. CORPORATE CAPABILITIES

The manner in which a project is organized and conducted is often the key which determines its success. That is, it is not only what must be done that is important, but also how it is done. In this section, we review the project planning and control, and the project organization and staffing.

A. PROJECT PLANNING AND CONTROL

We assessed the MTX US SPRINT project management in terms of:

- Definition of deliverables.
- Activity planning and scheduling.
- Task planning and work estimating.
- Staff assignments to tasks.
- Project resource measurement and costing.
- Management reporting.

Our findings follow.

1. Project Deliverables Are Reasonably Well Defined for Phases IA and IB and Less So for Phases IIA and IIB.

At the start of the project, the only defined project deliverable was the existing MTS TNMS product. Enhancements of this were partly defined at the outset, but have become more fully described with completion of Phase IB of the Project.

Deliverables of Phases IIA and IIB, like those for Phase IB, were affected by the merger of US Telecom and GTE SPRINT. High level functional specifications were amended to accommodate the needs of both organizations. These have now been approved and analysis has begun to translate the requirements into such project deliverables as programs, documentation and user supports.

A significant risk for MTX is uncertainty about whether the contract price can be raised to offset all increases in project scope arising from the analysis. While negotiation is possible under the contract for some changes in requirements, US SPRINT may challenge attempts by MTX to do this.

2. Project Activities Are Only Now Being Planned and Scheduled.

As we conducted our review in mid-October, 1986, project staff were preparing the first activity-based plans for the project. This planning has been impeded by the ambiguity which has surrounded the expected results of the project.

The initial schedule is in the form of a critical path represented as a Gantt diagram. The critical dates on the plan are derived from the contract, which in themselves were largely market-driven, and not from an assessment of the types and quantities of work needed. Therefore, it is currently impossible to determine whether the project team has sufficient capacity to meet the schedule.

3. The Absence of a Detailed Task Plan and Work Estimates Is a Weakness in the Project.

Typically, project activities are divided into numbers of tasks, reflecting the assignment of work to particular categories of project staff over specific periods of time. Thorough task planning is the foundation of sound project management. We have been unable to find a task plan for the US SPRINT project although senior management stated they intended to create one. In our opinion, this is a serious deficiency, particularly in view of the fact that the project has been underway since the summer and its scope has been enlarged significantly.

In the absence of a task plan, MTX faces the following risks:

- Insufficient resources to meet the terms of its contract with US SPRINT.
- Inappropriate mix of supervisors, analysts, programmers, specialists and support staff.
- The inability to put needed staff on the project when required.
- A loss of control due to difficulties in determining whether sufficient resources have been provided to complete planned work.

We consider the development of an appropriate task plan to be a critical requirement.

4. Work on Phases IIA and IIB Has Yet to Be Assigned to Individual Project Staff.

In the absence of a task plan, work cannot be assigned to individual members of the project team.

5. **Project Work Cannot Be Measured in Relation to a Plan.**

The time spent by staff on the project cannot be related to parts of the work program since this has yet to be divided into tasks. Therefore, the only work measurement that is currently possible is in terms of resources consumed to date. Even this is difficult since time reporting procedures are not in place.

6. **Management Reports Cannot be Produced on the Project.**

An activity schedule, task plan, staff assignments and resource measurement are all needed to support progress reporting. Since most of these have not yet been developed, there is currently no detailed basis for reporting progress in meeting defined objectives with allocated resources.

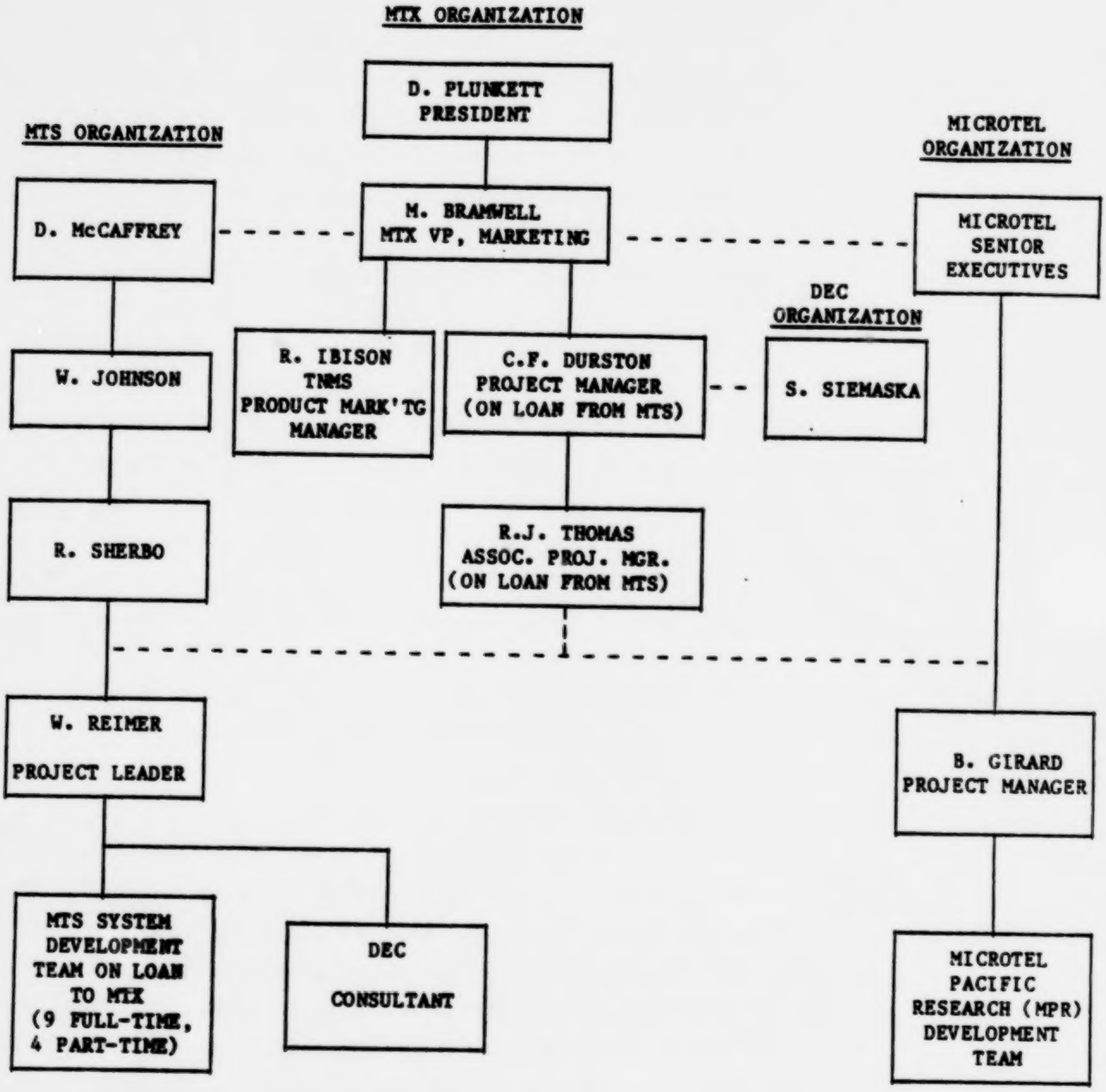
In addition to verbal reports, written weekly status reports are prepared by the project manager and submitted to Mr. Bramwell. These are intended to keep Mr. Bramwell informed of project developments and problems encountered.

There is a lack of standards, however, and generally poor practices in written reporting. Status reports are not signed by the author. Some are not dated. Some letters are not addressed, signed or dated. Originators of the letters are also unknown. The lack of standards in written reporting results in inconsistencies and variations in reporting formats.

Notwithstanding the intentions of senior staff to put in place suitable plans, we consider that the absence of these,

EXHIBIT 9

ORGANIZATION CHART OF THE MTX/US SPRINT PROJECT


MTX ORGANIZATION
D. PLUNKETT
PRESIDENT
MTS ORGANIZATION
MICROTEL
ORGANIZATION
D. McCAFFREY
M. BRAMWELL
MTX VP, MARKETING
MICROTEL
SENIOR
EXECUTIVES
DEC
ORGANIZATION
W. JOHNSON
R. IBISON
TNMS
PRODUCT MARK'TG
MANAGER
C.F. DURSTON
PROJECT MANAGER
(ON LOAN FROM MTS)
S. SIEMASKA
R. SHERBO
R.J. THOMAS
ASSOC. PROJ. MGR.
(ON LOAN FROM MTS)
W. REIMER
PROJECT LEADER
B. GIRARD
PROJECT MANAGER
MTS SYSTEM
DEVELOPMENT
TEAM ON LOAN
TO MTX
(9 FULL-TIME,
4 PART-TIME)
DEC
CONSULTANT
MICROTEL
PACIFIC
RESEARCH (MPR)
DEVELOPMENT
TEAM

at this stage of the project, is a serious and inexplicable deficiency. In particular, we are concerned that the price of the contract may not reflect the costs of the work that will be needed to satisfy MTX's obligations to US SPRINT.

A similar assessment of project planning and control factors was conducted at Microtel. Microtel was not prepared to provide us with a detailed project plan in terms of staffing, milestones and schedules. We do not know if such a plan exists, even though Microtel has quoted a new cost to MTX and must have based this cost on some sort of plan. Citing reasons of confidentiality, Microtel would not reveal its development methodology, documentation, or testing plans. Independent observations on Microtel's role on the project are contained in Appendix III.

It appears that wildly optimistic scheduling and pricing commitments were made during the original contract negotiations with MTX and US Telecom. To avoid a repeat of this situation, MTX should be allowed to understand and review Microtel's detailed project plan, time development costs, development methodology, documentation and testing plan before MTX agrees to the terms with Microtel.

B. BACKGROUND ON KEY PLAYERS

We assessed the skills, education and experience of members of the MTX/US SPRINT Project Team. The organization and reporting relationships of the project team are shown in Exhibit 9 on the facing page. The MTX project group is composed of the following resources:

- A project manager and associate project manager who are employees of MTS, on loan to MTX.

- A project leader, two systems analysts and seven programmer analysts; who are all employees of the CIS Group of MTS.

- Three systems programmers and one database analyst who are assigned to work on the project part-time; these persons are also employees of MTS.

Each member of the Project Group was asked to describe his or her project responsibilities, education and experience. We examined their experience in working for MTS and other employers. In particular, we sought information on past work with DEC systems and in developing telecommunications applications. Our findings are as follows.

1. Education and Work Experience Are Poorly Balanced

Few members of the Project Group possess both significant work experience and advanced educational, credentials. The project manager has over ten years experience working on DEC systems although much of this appears to be in the field of computer operations. The associate project manager and project leader have eight and six years of experience on DEC systems, respectively, plus significant experience working on other types of computer systems. These three people had not been part of the project until approximately one month after the contract was signed with US SPRINT.

The full-time working members of the Project Group have stronger educational backgrounds, with most possessing at least a Bachelor's degree. They have less than three years experience, on average; for four members of

EXHIBIT 10

STATUS OF US TELECOM PROJECT PLAN

SUGGESTED MODEL PLANNING COMPONENTS	STATUS OF MTX PLAN AS OF OCTOBER 17, 1986
PHASES	DEFINED
PROJECT DELIVERABLES (PHASE)	PARTLY DEFINED
ACTIVITIES	FIRST DRAFT PREPARED
TASKS	NOT DEFINED
WORK ESTIMATES	AT PROJECT, NOT TASK LEVEL
STAFF ASSIGNMENTS	HIGH LEVEL ESTIMATES; NOT RELATED TO TASKS
COSTS	MOSTLY UNDEVELOPED/UNSUPPORTED
FUNDS	TO BE DETERMINED

the team, their positions appear to be their first ones since graduation.

Of the nine full-time working analysts and programmers on the team, eight were hired by MTS specifically for the project. Only two full-time staff have prior experience with the system MTX is developing.

2. The Project Staffing Appears to Have Been Determined Arbitrarily

We were unable to determine how the project staffing was decided. In one document we reviewed, an estimate is shown for 10 person years of work. The current level of staffing, including project management, is equivalent to 13 full-time persons; this is one more than planned. To support the intended work program, we would normally expect a plan to be approved that covers the associated tasks and the work effort needed for each by individual project staff members. Some planning has been done at a global project level. When we interviewed project staff, work had just begun on planning project activities. On the facing page, we depict the stages of development of a project plan. We have been unable to secure such a document at a detailed level.

Without a detailed staffing plan, it is impossible to confirm that the following are appropriate:

- The size of the project team.
- The mix of skills possessed by the team members.
- The scheduled availability of full and part-time staff.

We earlier noted that the Project Team has the equivalent of 13 full-time persons committed to it. Three full-time persons are assigned to project management and supervision. Due to work demands, we understand that all these persons are working full-time on the project. There are seven programmers and two systems analysts. The assignment, approximately quarter-time, of three systems programmers and one database analyst is equivalent to the commitment of one full-time person to these activities.

Further, a high proportion of resources has been committed to project management and supervision. We suspect that this reflects the need for closer supervision of the largely inexperienced group of programmers as well as the needs of being prime contractor. We have been unable to determine what arrangements have been made for administrative support.

3. Project Staff Needs in Phase II Will Be Different than in Phase I.

Phase I is the conversion and enhancement of software presently running on MTS's DEC computers. In Phase II, the current system will be redeveloped to run on the more modern VAX series of DEC computers. During Phase II, we anticipate there will be a greater need for systems analysts. The requirement for their services will become more acute during the second phase.

4. Most Members of the Team Have Relatively Little Experience Developing Systems on DEC Computers.

Excluding the staff responsible for project management and supervision, few full-time members of the Project Team have much experience in developing applications in the DEC computer environment. The average experience of this group is approximately two years; five project staff have less than one year of experience in DEC applications development.

We recognize the difficulty of organizing a project team with all the desired qualifications. It is not uncommon for hastily assembled teams to lack important strengths. In the case of the US SPRINT Project Group, the weaknesses we perceive can be expected to have the following results:

- Increased requirements for close supervision.
- Protracted project orientation and start-up.
- Misinterpretation of system requirements and resulting design failures.
- Greater need for testing.
- Loss of work time spent redoing project tasks.
- Difficulties in maintaining acceptable project working standards.

For all these reasons, we believe the staffing requirements of the project should be re-examined.

As far as Microtel project staffing is concerned, Microtel states that it has more than 70% of its staff in place, and that they have all who are needed at the present time. Once again, citing confidentiality, Microtel would not divulge to us its total estimated man-effort for the project. We do know, however, that:

- The Microtel technical development manager and architect for the project apparently has 10 years of relevant experience.

- The design manager for the US SPRINT project has a staff of 17 at the present time, including the architect.

- Some of the staff of the Microtel US SPRINT Project Group were also responsible for developing and implementing the Trans-Canada Radio Interface Monitoring and Management System (TRIMMS), a project that appears to be as technically complex as Phase II of the US SPRINT project.

The preceding observations are based upon information provided to us by members of the management of MTS, MTX, and Microtel. We believe that some of the information that we have been unable to secure may exist in some form. Therefore, we qualify both our observations and recommendations.

V. SITUATIONAL ANALYSIS

The report, thus far, has answered the following questions:

- How does MTX view the TNMS marketplace?

- How has the US SPRINT contract influenced planned evolution of the TNMS product?

- What progress has been made to date?

- How have the business relationships with the subcontractors developed?

EXHIBIT 11

US SPRINT RISK ANALYSIS

REASONS FOR FAILURE	DEGREE OF RISK
LACK OF MARKETS	LOW
MARKET SIZE TOO SMALL	LOW
NOT NEW/NOT DIFFERENT	MEDIUM
NO REAL BENEFIT/MISUNDERSTOOD NEEDS	LOW
TECHNICAL DESIGN & ENGINEERING	LOW
POOR PRODUCT MATCH FOR COMPANY	LOW
LACK OF COST CONTROL	HIGH
LACK OF SCHEDULE CONTROL	HIGH
LACK OF STRONG RESPECTED MANAGEMENT	HIGH
COMPETITIVE RESPONSE	HIGH

- How are technical sub-projects being managed?

In the following sections of the report, we provide our analysis of how MTX may increase the likelihood of success for TNMS and the US SPRINT project under the headings of:

- Risk Assessment
- Strategic Alternatives and Their Evaluations
- Recommendations

A. RISK ASSESSMENT

Exhibit 11, opposite, outlines typical risk exposures faced by new products and compares the risks associated with US SPRINT. Market opportunities exist for network management products, such as TNMS. These systems have the potential to significantly improve network operating efficiencies and, therefore, are in demand by network operators concerned about decreasing operating costs and optimizing service levels. Thus, market-related risks are considered to be low.

The technology being used and proposed for TNMS is not new or radically different from current technology, and is similar to MTS traditional line of work. The hardware components exist in the market place. The software, although yet to be developed, is based on proven software engineering and design concepts, and is technically achievable by the project teams.

There are, however, four significant risks with the current US SPRINT project:

- The window of opportunity for achieving a significant penetration in the network management system market place is small, possibly of 18 months duration. Competitors are expected to enter the TNMS market segment. MTX and its subcontractors must be successful in managing the US SPRINT project and secure at least two new major sales during this time interval.

- The project lacks strong respected leadership which threatens the effective management of working relationships, and continuing business relationships between MTX and its subcontractors. Contractual agreements are incomplete and weak in many respects.

- Project cost accounting, time reporting and control mechanisms, necessary for this type of project, are lacking.

- Control of the master work schedule is not achievable until detailed work schedules are developed and project work is measured in relation to these schedules so that management may react to performance deviations in a constructive manner.

Current indications are that, on the basis of the US SPRINT project alone, the project will not generate profits for MTX. Future promise does exist if MTX can successfuly market TNMS and carefully manage the effort. The key issues facing MTX on this project are centred on total project management as a means of ensuring successful completion, mitigating losses and managing risks.

The critical factors for success, in order of priority, are the following:

- MTX's ability to manage client expectations.
- MTX's ability to manage its relationships with subcontractors.
- MTX's ability to manage the overall project and its components.

We next describe the strategic alternatives available to MTX.

B. STRATEGIC ALTERNATIVES AND THEIR EVALUATIONS

The ultimate objective of the US SPRINT project is to develop a state-of-the-art network management product for sale to other telecommunication carriers. MTX expects that MTS will require this product in its future upgrade of the PSCC.

The TNMS concept has potential applications beyond telephone companies, such as to help manage railway transportation, power transmission networks and waterworks, automated teller machine networks, pipelines, broadcast facilities and others.

Product design has been driven, in the past, by the unique requirements of the host environment, first MTS and subsequently US SPRINT. Customization of this type is an inherent aspect in marketing unique solutions. Future sales will require further customization to fit the business requirements of the customer. This is an integral feature of the product and, as a value-added service, should be priced accordingly. In time, MTX will have the opportunity to take a proactive role in product design by anticipating customer requirements, so that the need for substantial modifications and lead times for implementation is reduced and profits optimized. This opportunity will present itself regardless of the future role MTX plays with its partners.

To properly position itself, MTX must now consider its preferred role. There are a limited number of strategies which MTX can take in relation to US SPRINT:

- Withdraw from the project.
- Assume a subcontractor role.
- Continue the leadership role.

1. Withdraw from the project.

This option implicitly recognizes that MTX does not wish to continue with the US SPRINT contract nor the continued marketing of TNMS. Passive withdrawal, allowing the agreement to be terminated by US SPRINT rather than by MTX, is the only feasible withdrawal option.

This entails informing US SPRINT of an inability to effectively manage subcontractor performance so that US SPRINT is assured of reliable performance, delivery and costs. The revised quotations to support the US SPRINT expanded requirements have resulted in greatly increased project costs, exposures and delivery schedules. Under this scenario, MTX would allow and respect US SPRINT's right to alter its existing obligations by cancelling outright or scaling-down MTX's role to that of subcontractor.

In the event that MTX is not asked to play a continuing role in the US SPRINT project, the following will result:

- MTX and MTS will seriously damage their credibility in the market place.
- MTX will impair its existing relationships with DEC and Microtel and, possibly, other future relationships.
- Opportunity to recover sunk costs will be lost.
- MTS will not benefit, from a design and price perspective, from customer-financed development of its internal TNMS upgrade.
- Additional risk and exposure to financial losses.

In the event that MTX is asked to continue in another capacity, MTX should negotiate relinquishing its prime contractor role to one of the other major partners. This is discussed in greater detail under the next strategic alternative scenario.

2. Take a subcontractor role

This option suggests that MTX will relinquish its prime contractor role to DEC or Microtel, with US SPRINT's approval. All the applicable contracts and performance levels will have to be modified and agreed to by all parties. MTX must protect its future market position by negotiating Network Administration Software (NAS) proprietary rights, royalties, licences, customization terms, and marketing guarantees for a minimum period of approximately 10 years. MTX would have to exercise very tight management over its portion of NAS development and support TNMS marketing efforts of its partners. By exercising this option, MTX:

- Reduces its exposure to financial risk and lost reputation on the basis of the NAS component only.
- Preserves future sales opportunities, profit potential and continued reputation as a supplier of network management expertise.
- Maintains existing relationships with its partners and the customer as well as its ability to enter into new business relationships in the future.
- Continues to receive revenue on its part of the US SPRINT contract.
- Facilitates customer-financed development of the TNMS upgrade for MTS.
- Offers additional opportunities to its partners to assume an expanded role.

The final alternative for MTX to follow is to continue its role as prime contractor.

3. Continue the leadership role.

This option maintains the present roles and responsibilities whereby MTX:

- Maintains its high profile.
- Does not significantly alter project dynamics and relationships.
- Continues to assume the greatest level of risk and exposure.
- Continues marketing momentum.
- Maintains revenue flows and future profit potential.
- Facilitates customer-financed development of TNMS upgrade for MTS.

The recommnded course of action is described next.

C. RECOMMENDATIONS

In the previous section, the strategic alternatives available to MTX were reviewed. The least desirable option is passive withdrawal from the US SPRINT project, due to the negative impact on long-term relationships, credibility and reputation. It also eliminates any possibility of recovering sunk costs.

In our opinion, MTX is best suited and best served by taking the role of valued partner in the TNMS consortia, but not as prime contractor.

This does not remove the requirement for MTX to firmly establish its marketing position for the NAS component of TNMS, but greatly reduces its exposure. However, due to the advanced stage of this project, the most practical alternative may be for MTX to continue as prime contractor until such time that it can satisfactorily assume a subcontractor role.

In order to be successful as prime, MTX must:

- Exercise effective total project management by:
  - Adding a strong executive to strengthen the existing project management team.
  - Developing a master plan that encompasses all sub-projects and their linkages.
  - Improving the level of detail and accuracy in all project roles, performance, cost and delivery schedules.
  - Insisting on full access to all detailed planning and progress reporting by all participants.
  - Eliminating all ambiguities and inconsistencies in agreements.
- Negotiate more favourable terms in its contractual arrangements with the customer and partners by:

  - Seeking higher financial returns commensurate with the level of risk.

  - Minimizing its performance exposure.

  - Increasing the accountability of its subcontractors.

- Implement effective project administration and control policies, methods and mechanisms such as:

  - Insisting that MTS provide a ceiling price quote and clearly reinforce commitments to the project by establishing the necessary values, rewards and accountability for the CIS staff assigned to the project.

  - Standardizing communication and reporting formats and practices.

  - Installing an automated project monitoring and cost accounting system.

  - Conducting regular performance reviews and preparing assessment reports.

  - Establishing firm quality assurance guidelines and assigning clear responsibility for their enforcement.

  - Utilizing independent quality control reviews, where feasible.

- Implementing clear change control procedures and form.

- Ensuring that suitable capacity surpluses are built into the system design, to exceed minimum requirements specified by US SPRINT (e.g., number of alarm points, number of changes of state per second).

- Reducing deliverables into smaller, discrete parcels.

- Structuring project plans so that the most critical development issues are identified and handled early in the project.

- Actively supporting the marketing of TNMS solutions to other prospective customers by allowing the Vice President of Marketing to concentrate his management efforts strictly on market planning, research and selling.

- Ensuring that the current project manager is allowed to concentrate on the critical responsibilities of effectively planning and managing client areas such as:

    - Definition of project success criteria.

    - Integration and acceptance testing.

    - Conversion and implementation planning.

    - Client orientation and training.

    - Ongoing operational service and support.

VI. CONCLUSION

TNMS has good market potential beyond the initial US SPRINT project and promises to establish MTX and its partners as major suppliers of network management systems. Profitability for MTX is likely with future incremental sales. Both profitability and market positioning will depend on the successful completion of US SPRINT.

The current project team has the potential to successfully conclude the US SPRINT project, provided they are given proper leadership, support and a sufficient level of resources to do the job. This applies equally to the other major software developers proposed on the project such as Microtel. The consultants have observed that, as a result of this review, MTX has introduced a number of initial improvements.

APPENDIX IA

ASSUMPTIONS FOR COOPERS & LYBRAND'S INTERPRETATION OF MTX STATEMENT OF EARNINGS (LOSS) - EXHIBITS 4 & 5

ASSUMPTIONS FOR COOPERS & LYBRAND'S INTERPRETATION OF MTX STATEMENT OF EARNINGS (LOSS) - EXHIBITS 4 & 5

1. Equipment/software revenue is assumed to be based on Contract #501102-5-F030 between MTX and US SPRINT.

2. Service revenue is assumed to be as outlined in Appendix IB.

3. Software lease revenue is assumed to be $1,370 per month for fifteen months, for a total of $20,550.

4. DEC costs are as per the DEC subcontract.

5. Microtel costs are as per subcontract (still under review).

6. MTX hardware and software costs are assumed to be those costs expended in the development of the US SPRINT software and hardware. These costs are assumed to be fully expensed for this project (less 40% salvage value) and not deferred and amortized over three years. This same assumption is applied to marketing expenses for this project.

7. MTX hardware and software costs are assumed to be as follows:

	$
Lease payments for hardware (36 months)	846,360
Bargain purchase option assumed to be exercised at end of lease term	94,040
	940,400
Software purchased	142,729
MTX development costs	500,000
Less: Interest on capital lease	(121,058)
	1,462,071

8. Cost of capital is assumed to be the interest component of the capital lease payments as in "7".

9. Project management expenses are assumed to be as outlined in Appendix III:

Staff salaries	Appendix IC
Travel and accommodation	Appendix IC

Administrative expenses are assumed to be $15,300, with miscellaneous expenses of $3,000.

10. Marketing expenses are assumed to be $184,176, completely expensed against this specific project.

11. Service costs are assumed to be as follows:

- MTX costs to service US Telecom hardware and software; $5,524 per month for 12 months.

- DEC costs to service US Telecom hardware and software paid by MTX; $39,571 per month for 12 months.

- MTX costs to service hardware and software used for development; as outlined in Appendix ID.

ASSUMPTIONS FOR MTX PROJECTED STATEMENT OF CASH FLOW

1. Revenues from equipment and software assumed to be received pursuant to Contract #501102-5-F030; however, the inception is deferred three months. All other receipts occur three months subsequent to contracted date, as follows:

Sept. 1986 $	Oct. 1986 $	Nov. 1986 $	Dec. 1986 $	March 1987 $	May 1987 $	Nov. 1987 $	Total $
481,740	92,802	185,604	574,542	1,741,355	435,339	1,306,016	4,817,398

2. Revenues from service provided to US Telecom are assumed to be received as outlined in Appendix IA.

3. Revenues from the software lease provided to US Telecom are assumed to be at $1,370 per month for 15 months, commencing June, 1986.

4. Cash disbursements for Microtel hardware and software are assumed to be disbursed as follows:

Oct. 1986 $	Dec. 1986 $	March 1987 $	August 1987 $	Nov. 1987 $	Total $
465,894	334,353	501,529	167,176	334,353	1,803,305

5. Cash disbursements for DEC hardware and software are assumed to be $137,367 per month for 12 months, commencing January, 1987.

6. MTX hardware and software cash disbursements are lease costs for the hardware leased to develop the computer applications sold to US Telecom and outright purchase of software for that application. Costs for the software purchased are assumed to be $142,730 disbursed in September, 1986 and the lease payments for hardware assumed to be $23,510 per month for 36 months, with a 10% buyout purchase option exercised at the end of the lease term.

7. TNMS development costs are assumed to be $45,455 per month for 11 months, commencing in July, 1986.

8. Project management costs are as outlined in Appendix IC as follows:

• Staff salaries	Appendix IC
• Travel and accommodation	Appendix IC

Administrative costs are assumed to be $638 per month and miscellaneous costs assumed to be $125 per month both for 24 months.

9. Marketing expenditures are assumed to be expended at the inception of the project in the amount of $184,176.

10. Service costs are assumed to be as follows:
    - MTX costs to service US Telecom hardware and software: $5,524 per month for 12 months commencing September 1986.

    - DEC costs to service US Telecom hardware and software paid by MTX: $39,571 per month for 12 months, commencing September, 1986.

    - MTX costs to service hardware and software used for development: as outlined in Appendix ID.

APPENDIX IB

SERVICE REVENUE CALCULATION

APPENDIX IB

SERVICE REVENUE CALCULATION

June 1, 1986 to August 31, 1986 -	
Field service (3x$3,651)	10,953
Software service maintenance (3x$8,978)	26,934
September 1, 1986 to May 31, 1987 -	
Field service (9x$17,216)	154,944
Software service maintenance (9x$32,492)	292,428
June 1, 1987 to December 31, 1987 -	
Field service (6x$13,564)	81,384
Software service maintenance (6x$23,514)	141,084
TOTAL REVENUE IN $US	707,727
TOTAL REVENUE IN $CANADIAN (Exchange @1.37)	969,587

APPENDIX IC

MTX PROJECT MANAGEMENT COST CALCULATION

APPENDIX IC

PROJECT MANAGEMENT

STAFF SALARIES

	MTS Salary $	Admin Fee $	MTX Support $	Total $
Project Manager				
Assumptions -				
MTS Base - 50k Admin. Fee - 14% MTX Supplement - 20k Term - 2 years.	100,000	14,000	40,000	154,000
Project Leader				
Assumptions -				
MTS Base - 40k Admin. Fee - 14% MTX Supplement - $1,500 Term - 9 months	Paid by CIS	-	1,500	1,500
Clerical Support				
Assumptions -				
MTS Base - 28k Admin. Fee - 14% Term - 6 months (over life of project)	14,000	1,960	-	15,960
Technical and Other Personnel				
Assumptions -				
MTS Base - 40k Admin. Fee - 14% Term - 1 year (over life of project)	40,000	5,600	-	45,600
TOTAL	154,000	21,560	41,500	217,060

APPENDIX IC

PROJECT MANAGEMENT

TRAVEL AND ACCOMMODATIONS

	Travel $	Accom. $	Meals $	L. Trans. $	Total $
Project Manager					
Months 1 and 2					
Assumptions -					
2 trips/mth ($800/trip) 5 days/trip $60/day - meals $45/day - loc. trans. $140/day - accom.	3,200	2,800	1,200	900	8,100
Subsequent months (22)					
2 trips/mth. ($800/trip) 3 days/trip $60/day - meals $45/day - loc. trans. $140/day - accom.	35,200	18,480	7,920	5,940	67,540
TOTAL	38,400	21,280	9,120	6,840	75,640
Project Leader					
Months 1 and 2					
Assumptions -					
2 trips/mth. ($800/trip) 5 days/trip $60/day - meals $45/day-2 loc. trans. $140/day - accom.	3,200	2,800	1,200	900	8,100
Subsequent Months (7)					
2 trips/mth. ($800/trip) 3 days/trip $60/day - meals $45/day-2 loc. trans. $140/day - accom.	11,200	5,880	2,520	945	20,545
TOTAL	14,400	8,680	3,720	1,845	28,645
GRAND TOTAL	52,800	29,960	112,840	8,685	104,285

APPENDIX ID

SERVICE COSTS OF DEVELOPMENT HARDWARE AND SOFTWARE

APPENDIX ID

SERVICE COSTS OF
DEVELOPMENT HARDWARE AND SOFTWARE

	$	$
Total monthly service costs		8,418
Monthly service costs for $8,200 CPU		(1,756)
Service costs for 15 months		6,662
		x15(1)
		99,930
Monthly service costs for $8,200 CPU	1,756	
Service costs for 6 months	x6(2)	10,536
TOTAL MTX SERVICE COSTS		110,466

(1) Service contract extends for 18 months less 3 month warranty period.

(2) Service contract extends for 18 months less 12 month warranty.

(3) Cash disbursements are assumed to commence December, 1986, at $6,662 per month. Additional charges of $1,756 per month are assumed to commence August, 1987.

APPENDIX II

DRAFT COMMENTS ON THE AGREEMENTS

Prepared by

AIKINS, MacAULAY & THORVALDSON

PART 1 - GENERAL COMMENTS AND QUALIFICATIONS

1. Some of the agreements in the binder for our review are signed, and some are in draft form only. Our comments of course relate only to the draft as presented to us. If there have been amendments since the draft which we have now reviewed, the changes may be substantial.

The contracts reviewed to the date of this memorandum, as revised (October 30, 1986) are:

MTS/U.S. Sprint

a) Hardware Purchase Agreement - dated May 28/86 - signed

App. A - skimmed only

App. B
App. C
App. D (Testing) skimmed only
App. E
App. F - skimmed only
App. G
App. H (Definitions) - skimmed only
App. I - not reviewed

App. J

b) Software License Agreement - no date - signed
Appendices A to D - as above

App. E
App. F - reviewed only briefly
App. G

c) Escrow Agreement with Data Securities International dated May 28, 1986 - signed

- purported amendment page

d) Hardware and Software Maintenance Agreement May 28, 1986 - signed

Appendices A and B

MTX/Digital

a) Subcontract - not dated - signed June 26 and July 15/86
Schedule A - as above
Schedule B

Schedule C

Schedule D - 2 DEC leases - June 18, 1986 - signed with purchase options

Schedule E

Schedule F

Schedule G

Schedule H

Schedule I - (nondisclosure) - not signed - appears to be draft only

Schedule J - loan agreement - not signed

MTS/MICROTEL

a) Subcontract - draft (qn date) - as amended by letters dated September 19, 1985 - (Microtel), September 30, 1986 (MTX), October 15, 1986 (Microtel), October 17, 1986 (MTX)

Schedule A - as above

Schedule B - skimmed only

Schedule C - blank

Schedule D - as amended

Schedule E - blank

Schedule F - (Hardware maintenance)

Schedule G - (Software Maintenance)

Schedule H - Nondisclosure

Schedule I to K - blank
Schedule ? -(Escrow Agreement)

MARKETING AGREEMENTS

a) With Digital - April 18, 1986 draft and suggested amendments by MTX June 9, 1986

b) With Microtel - agreement April 14, 1983 - signed
- memorandum of understanding June 31, 1983 - signed
- memorandum of understanding March 7 or July 3, 1985 - signed

2. The actual party to the U.S. Sprint contracts is U.S. Sprint. You have advised us that U.S. Sprint is the result of a merger between U.S. Telecom and G.E. Sprint earlier this year. In Manitoba, upon an amalgamation, the amalgamated corporation assumes all the rights and responsibilities of the amalgamating corporations. We can only assume that the laws of the United States where the merger took place are the same.

3. The only parties bound by the contracts are the actual parties to the contract. Some agreements, such as the

marketing agreements, purport to be signed on behalf of subsidiaries and affiliates. This is of no effect at law vis-a-vis the affiliate or subsidiary. Question also whether as a practical matter companies associated with U.S. Sprint, Digital or Microtel will be involved in those transactions and should therefore be signing parties to these agreements. Of particular concern are the non-disclosure covenants.

4. You have indicated to us that there were certain bid documents prepared. How do these relate to the executed contracts? How do they differ from the executed contracts? For the most part, the agreements contain a provision saying that the written agreement is to govern and to supercede any prior discussions or documents. That being the case, the bid documents should have no bearing except to the extent that portions of it are incorporated by reference.

5. You have advised us that earlier this year U.S. Sprint changed its product specifications and requested new price quotations from MTX. Question what would happen if U.S. Sprint does not agree with MTX's new prices. U.S. Sprint cannot of course unilaterally change any agreement with MTS, (see 18.7 and 15.6 of the Hardware Purchase and Software License respectively). Our initial view is that U.S. Sprint would be bound to the specifications accepted already by MTX and the other parties.

6. Pursuant to the minutes dated June 15th, 1986, which you provided to us, it is the President of MTS who is authorized to sign the U.S. Sprint contract, lease or purchase of the VAX computer, purchase of the software for the VAX and other subcontracts with Digital and Microtel. You had suggested that the Vice-President had signed various of these documents although those contained in the binder are signed by "D.M. Plunkett, President". In any event, the fact that the party who has signed is in fact not the authorized signing officer does not affect the enforceability of the contract against MTX. Section 18 of our Corporations Act precludes a corporation from denying that the contract is properly authorized, or that the party who signed it (assuming him to be someone who is in a position that would normally have the authority to sign such contracts) had actual authority. The fact is that the contract is authorized, although the signor may not be. MTX may be able to take action against an officer who signs without authority, but it cannot use this as a defence or excuse to the signing of the contract unless the other party to the contract knows of the lack of authority. That being the case, perhaps MTX should consider ratifying an actions taken by the Vice-President in respect of these agreements.

7. Each of the contracts states a different governing law to be applicable. For U.S. Sprint it is Kansas, for

Digital it is Massachusetts, and for the proposed Microtel Subcontract it is not stated although the 1983 marketing contract was governed by the laws of the Province of Manitoba. The Microtel Escrow refers to British Columbia law. We of course can only give our view on the contracts as if the laws of the Province of Manitoba were the governing law. We do not express any opinion on how the laws of Kansas or Massachusetts may differ. We would recommend that the draft Microtel agreements all state what the applicable law is to be.

8. The combined system is contributed to by U.S. Sprint, MTX, Digital and Microtel. There are a number of covenants undertaken by the various parties as to warranties, repair and replacement of parts, responsibility for on-site service where failure can be attributed to the components supplied by that party, etc. As a practical matter, are the parties going to be able to readily determine the party to whom the fault can be attributed? If not, there are potential questions as to who is responsible for on-site service and who is responsible to pay the cost of the parts and labour necessary to repair or replace to get the system operational again.

9. To the extent that there are inconsistencies within the contracts entered into between MTX on the one hand, and U.S. Sprint, Digital or Microtel on the other, there is no

clear and unequivocal method of determining which provisions are to take precedence.

The U.S. Sprint contracts are drawn as separate agreements, without a statement as to how inconsistencies are to be reconciled.

Paragraph 1 of the Digital subcontract purports to deal with possible conflict situations. However, provision 1(a) regarding order of priority, is inadequate. Priority among the various documents is stated to be on the basis of date, but many of the attachments to the subcontract are not signed or dated, or are attachments only rather than separate contracts.

The corresponding provision of the Microtel subcontract, also paragraph one and as amended by the September 19th changes, is equally inadequate for establishing priority in the event of conflict among the various agreements with Microtel.

PART II - U.S. SPRINT

A. Hardware Purchase Agreement

1. The definition of hardware and software is set out in the second paragraph of the preamble by reference to Appendix A. Is it sufficiently clear from that preamble and from Appendix A what is contained in those defined terms? Having reviewed Appendix A only briefly, our view is that there would appear to be sufficient detail for there to be no question as to what is included or excluded. Please note that the reference should probably be to Appendices A and B, as B describes again the software.

2. Paragraph 3 states that time shall be of the essence in meeting delivery dates and payment terms. At the same time the paragraph recognizes that delivery and installation dates may be delayed "if the system description and/or configuration change" or as a result of U.S. Sprint not completing responsibilities listed in J. One concern is as to what the applicable delivery and installation dates may be now given the delay caused by the changes proposed by U.S. Sprint earlier this year. Were new delivery and installation dates specified and agreed upon? In paragraph 3, U.S. Sprint agrees to an extension, but it does not say how long. We note the letter from U.S. Sprint dated July 23, 1986, which

is a waiver with respect to any delays "directly attributable to MTX's efforts to respond to changes in scope". Again, question what deadlines MTX now has to meet?

As for paragraph 3, are the responsibilities of U.S. Sprint outlined in Appendix J (and repeated at paragraph 19 of the Hardware Purchase Agreement) sufficient to describe all those duties or responsibilities of U.S. Sprint with respect to the entire contract, and in particular those duties and responsibilities which will impact on MTX's ability to meet the delivery and installation deadlines? (see also Part II, U.S. Sprint, A, 12 and Digital/Microtel, B, 2 and Part III, 2)

3. We note that risk of loss is assumed by U.S. Sprint at point of delivery. Care must therefore be taken that adequate insurance be in place until that time.

4. Pursuant to paragraph 5, U.S. Sprint has the sole discretion as to whether or not the product specifications are met. In that instance, 5.3 states that U.S. Sprint's sole remedy is to receive prompt reimbursement for payments made to MTX, and U.S. Sprint is to return all hardware documentation and other materials. In assessing MTX's exposure at that point, the considerations are:

a) What are MTX's responsibilities to Digital and Microtel in that event? (See Part III, question 5)

b) What covenants are there with respect to U.S. Sprint copying any of the products supplied or related documentation, and what continuing covenants are there to maintain the confidentiality of any information which it may have received?

5. The warranties as stated at paragraph 6 are:

a) in respect of non-conformity with the specifications set out in Appendix A;

b) except as provided in (c) and (d) in respect of defects in workmanship and material of the Hardware for a period of three months from acceptance;

c) in respect of defects in workmanship and material of the VAX 8200 CPU for one year;

d) in respect of defects in workmanship and material of equipment to be installed on a lease or no charge basis during Phase I - no warranty period.

When stated elsewhere (Appendix C to each of Hardware and Software Agreements, paragraph II and Appendix A of Maintenance Agreement) some details of these warranties are inconsistent. For example at Appendix C there is no disclaimer for loaned or leased equipment.

At paragraph II of the Maintenance Agreement is an additional warranty regarding "mean availability". (see Part II, page 14 and page 42, item 8).

A further warranty appears at clause 9 respecting continuous defects. (see discussions at Part II, U.S. Sprint A, 7).

Please note that in the standard conditions to the Digital lease agreement paragraph 5, MTX is subrogated to the rights of Digital where the product is supplied by a third party but any other warranties or representations of Digital are disclaimed (paragraph 11). With respect to the purchasing and licencing of Digital products, Schedule E to the Digital agreement applies. Warranty is dealt with at paragraph 5. Digital warrants workmanship and material for either 90 days, one year for specific products as indicated in the price list including magnetic media, chips and moduals or a minimum of 30 days for parts supplied or repaired under service, all from date of installation or if Digital did not install, from date of delivery. All that Digital is required to do is repair or replace, and if the equipment is determined not to be defective within the terms of the warranty MTX would be responsible to pay Digital all costs of handling transportation and repairs. Apparently only some of the Digital equipment is eligible for on-site warranty, and this will be indicated in the applicable price list. Question if any of the equipment supplied by Digital under the contracts is not eligible for on-site warranty period.

As for equipment loaned by Digital, paragraph 4 of Schedule J to the Digital agreements states specifically that there are no warranties.

With respect to the draft Microtel agreement, Schedule D, paragraph 15 provides that all work and design supplied by Microtel is warranted for a period of 12 months from final acceptance but in no event exceeding 15 months from delivery. Again warranty is limited to repair or replacement, and further limited to that being done at Microtel's facility. Transportation and packing costs to the facility are MTX's cost. Note also that there are eight specific exemptions from the warranty, and it is expressly stated that the warranty as written is the only warranty which shall apply. Note that the warranty period is not without change to MTX by Mircotel since the Hardware

Maintenance period overlaps (Schedule F, Microtel Hardware Maintenance, Appendix A).

Note the U.S. Sprint Maintenance Agreement paragraph 11. This is a special warranty as to achieving a mean system availability of 99.9%. That warranty appears at page 22 of Appendix A incorporated into both the Digital and Microtel agreements. With respect to Digital, the difficulty is that although in the main agreement Digital promises to perform its work generally in conformity with all of the documents forming the Digital agreement, different warranties apply to equipment provided on different bases, and there is no adequate unambigious provision which tells us which document is to take precedence. There is therefore no clear unequivocal covenant by Digital to meet that standard. In the Microtel agreement as drafted, on the other hand, there is an express assumption by Microtel of all undertakings given by MTX to U.S. Sprint by virtue of the documents under the Subcontract, including Appendix A (paragraph 6(c)).

But for small inconsistencies in the manner in which MTX warranties to U.S. Sprint are stated, the time frames of the general warranties given by MTX and those of its subcontractors would appear to coincide. The exposure to MTX is the extent to which the subcontractors have provided for specific limitations on their warranty, both as to circumstances, and the costs which are covered and the services required of them. In so far as MTX has not made those same disclaimers or provided for those limitations, MTX has some exposure in that respect.

6. The indemnification given by MTX to U.S. Sprint under paragraph 8 is for all loss, expense or other damage arising from the negligence of MTX and the sale to or use by U.S. Sprint of the hardware. On infringement cases, MTX is to replace or modify the hardware, obtain a licence to allow U.S. Sprint to continue to use it, or if necessary return a pro rata portion of the sale price "based on the term of the license or ten years whichever is less". The manner of calculating this credit is not clear. As there is no licence applicable to the hardware, the pro-ration probably would be on a 10 year period. There is also no stated requirement for U.S. Sprint to return the hardware for the credit.

In connection with this indemnity, the following should be noted:

a) Where is the cross indemnity from U.S. Sprint?

b) Note that in any event MTX is not to be liable for incidental or consequential damages (eg. loss of profit) - see paragraph 10.

In the Digital agreements:

i) At paragraph 9 of the equipment lease MTX remains solely responsible and agrees in fact to indemnify Digital for all liability arising out of the ownership, possession, leasing, operation, maintenance, etc. of the equipment.

ii) With respect to purchase of Digital equipment, Schedule E contains no indemnity provision, but does contain a limitation of liability at paragraph 13 which limits MTX right to recover for Digital fault or negligence to $1,000,000.00. In any event, Digital is not to be responsible not only for incidental or consequential damages but also "loss of data" or "use of products". A further limitation is that the action must be brought against Digital within 18 months after the cause of action accrues.

Under Schedule D to the subcontract with Microtel on the other hand, paragraph 3 says that Microtel accepts all risk and responsibility and by paragraph 4 covenants to provide copies of its liability insurance. An indemnity provision is included at paragraph 6, covering Microtel's negligence. Stated limitations on that indemnity are the exclusion of consequential, incidental, or special damages, and the restriction of either party is maximum liability to the Subcontract price.

7. We have several questions or concerns with respect to Clause 9 regarding termination as follows:

a) There is a deemed default under 9.1 if the hardware "continues to exhibit defects causing disruption of use over repeated periods of down time" over a period of five months. How serious must these defects be, what length of down time must be recorded, how frequent must these problems be, and does this mean that notwithstanding the fact that title may have transferred to U.S. Sprint, it can then monitor defects over any five month period thereafter and later complain to MTX? (Note the provisions are continued notwithstanding transfer of title (paragraph 18.6)). This specific warranty is not made by either Digital or Microtel. MTX does not therefore have a corresponding right of termination against either of them. MTX recourse would be limited to the warranty and maintenance provisions until such time as U.S. Sprint terminated.

b) The U.S. Sprint contract allows a 30 day cure period after written notice of default. A similar provision appears at 8.1 of the software contract. The escrow agreement being Schedule 2 to the software contract, purports to provide further deemed default provisions for MTX's performance under the software licence agreement. The problem is that such a provision is entirely inappropriate to an escrow agreement which should deal only with the terms of escrow. We would argue that any default provision must be so limited to application within the agreement in which its appears. Thirty days cure period is also provided for in the hardware and software maintenance agreement.

Under the Digital lease, paragraph 12, there is no cure period for failure to make payment or breach of warranty, and a ten day cure period for default of any other covenant. Under Schedule C to the purchase agreement from Digital, there is no express default clause, although you will note at paragraph 12 that there are cancellation charges in the event that the contract is cancelled for failure to meet obligations. There are no cross termination clauses between the Digital agreements and the U.S. Sprint agreements.

Under the Microtel agreement, Schedule D, paragraph 7 as drafted and as amended by correspondence to October 17th, 1986, the only default contemplated other than insolvency, bankruptcy and related events, is noncompliance with a "material" provision, not cured within 28 business days after written notice of default. In the event of default by Microtel, MTX may terminate and/or make arrangements to complete Microtel's work. For that purpose, Microtel's materials, etc. may be used, for which Microtel is entitled to fair compensation. In additional, Microtel is to be credited for what is completed and work in process at termination, such credit to be applied against damages incurred by MTX by reason of the default.

There is therefore some exposure to MTX in so far as these other agreements are not consistent with the U.S. Sprint default provisions.

8. 9.2 describes certain events in which a party is automatically regarded as being in default. One of these is "if either party becomes insolvent". Question how any one can objectively determine exactly when that might occur?

9. Pursuant to 9.3, a party is to be excused from default for causes beyond its reasonable control. Of the items listed, quaere: what is meant by "communications line failure not the fault of the affected party"? Should this not read "nonperforming party"? As well, this clause raises questions of the meaning of "due diligence", "reasonable control", and "everything possible". Such clauses would of course be interpreted within the context of the agreement as a whole.

The effect of the clause is to excuse non-performance by one party indefinitely. The U.S. Sprint contract does not state expressly, however, that upon termination for this reason the defaulting party is to be excused from liability. It remains a question if that is necessarily to be implied from this clause.

Note: Delays in delivery due to such events automatically extend delivery dates for a period equal to the duration of such events. Question how long MTX has been delayed by U.S. Sprint's call for changes in the specifications?

Delays in delivery or installation not within a party's control are similarly excused in Deigital

Subcontract, Schedule F, and Microtel Schedule D, paragraph 12.

Note also that notwithstanding that the reason for delay may be a force majeure event, the other party may terminate after 15 days. The Digital and Microtel contracts do not allow termination for these reasons except Microtel maintenace agreements (9.3). Under the Microtel agreement (Schedule D, 12) a party is expressly excused of liability for breach in these types of circumstances.

Under the software agreement, on the other hand, default for an act of insolvency, etc. is only in favour of U.S. Sprint.

Regarding the Digital agreements and default, with respect to the Digital lease the applicable provisions are paragraphs 12, 13 and 15. The obligation of MTX is absolute, and its liability under the rental agreement may be accelerated in the event that it is in default under that agreement. Note paragraph 15 that although it is unable to use the equipment for any reason, it is still obliged to pay.

Similarly under the Digital purchase agreement, the obligation to pay Digital at 3.1 seems absolute. Although the terms of the main agreement incorporate by reference the specifications of the U.S. Sprint contract, the balance of the terms and conditions of the Digital agreement are without regard to that contract. In fact, Clause 9 of the subcontract states specifically that the subcontract is to be terminated only in the event of a material breach of Digital's performance, for which Digital is to be allowed a ten day cure period. There is no mention of what is to happen in the event that MTX breaches the subcontract. Certainly there appears to be no cure period for MTX. There are also no express cross termination clauses with the various Digital Agreements or with the U.S. Sprint or Microtel agreements. At clause 10 of the Microtel subcontract, MTX is expressly allowed to terminate the subcontract if U.S. Sprint terminates, but only if the effective cause is failure of Microtel to fulfill its contract. Furthermore, MTX's remedies are limited in that instance. Question if it is thereby implied that Microtel is similarly limited?

10. We note clause 13 which requires MTX to provide U.S. Sprint with a great deal of specific documentation on the TNMS at no charge to U.S. Sprint. Question, however, at 13.3 if the definition of "mandatory revisions" is sufficient to distinguish these from "updates" as in 13.2. The

difference of course is that after the warranty period, MTX is entitled to charge for the documentation provided.

11. Confidential and proprietary information.

Any provision of this nature should be analyzed to determine if there is a clear prohibition on use, duplication and disclosure and ascertainable exceptions from that prohibition.

Paragraph 16 is the covenant as to confidentiality with respect to the hardware purchase. In our view this paragraph is wholly inadequate both as to the information covered and the conduct prohibited. The covenant is to keep confidential "information concerning the other party's business". The question is what might that phrase be interpreted to include. That sort of wording is normally associated with customer lists, methods of marketing, etc., but does not clearly include technology with respect to products developed by MTX. What should be included is the type of detailed covenants contained in the Microtel drafts.

Specifically at 13.4 U.S. Sprint agrees not to reproduce except for "its internal use". At paragraph 16 the covenant is against permitting "the duplication of disclosure" (presumably should be "duplication or disclosure") to third parties other than employees who need to know. Excluded from confidential information as defined is any information within public domain.

This treatment of confidential information should be repeated consistently throughout the U.S. Sprint documentation, and it is not. Furthermore, there must necessarily be some exposure to MTX if the confidentiality agreements with U.S. Sprint are not consistent with the covenants with Digital and Microtel, which they are not.

As for comments regarding the U.S. Sprint documents themselves:

a) Software licence agreement provides clearly that title is to remain with MTX (paragraph 1). Paragraph 11 being the proprietary information clause deals specifically with the "Software", as defined together with information specifically marked "Confidential" or "Propriety". Pursuant to Paragraph 1, improvements or changes otherwise contemplated by the agreement are included in that definition. For the software and other information that is covered, there is an absolute prohibition on duplication, use or disclosure other than as authorized. Note that clause 5 allows copies for "archival or back up purposes only". Is it clear what this allows to U.S. Sprint? All software, documentation and copies are to be returned to the owner upon the expiry of the agreement.

b) A different type of covenant appears at paragraph 11 of the escrow agreement, prohibiting use of escrowed materials except as required to correct a defect, malfunction or nonconformity. This agreement relates only to the escrowed materials, or source codes.

c) The confidentiality provision of the maintenance agreement is at 13.1. This purports to protect "any and all information emanating from the other's business". Again quaere what is covered by that definition. To that extent, there is an absolute prohibition on unauthorized use.

As for inconsistencies with the Digital and Microtel agreements:

a) The nondisclosure covenants with Digital are contained in Schedule 1. The copy provided to us is not signed, and the blanks appear to be completed "in draft". The information protected is defined as "information relating to MTX development of data management and analysis system", and is limited to certain identified drawings, plans, specifications, product processes and schedules. Question what this includes? The covenant by Digital specifically is for two years or less, is only to "prevent disclosure to third parties" and use for any purpose other than "defining a functional specification for such data management and analysis system", and only then if the information is written down, designated as confidential and provided to Digital's designated officer. There are also a number of specific exemptions the most notable of which are 2(b), the information is known to Digital at the time of disclosure or independently developed by Digital, 2(f), information relating to general concepts of computer hardware and software technology, and 2(g) information inadvertently disclosed presumably by Digital to a third party provided that Digital takes reasonable steps to prevent misuse or further disclosure. You will note also that paragraph 6 suggests that this agreement takes precedence over all prior agreements.

(b) The Digital agreement provides that its information if copied for MTX's use must contain its copyright notice or be labelled as proprietary information. MTX does not have a corresponding covenant from U.S. Sprint to so mark duplicate information, either on MTX material or to satisfy its obligations to Digital.

(c) The nondisclosure covenants of Microtel appear at two places, notably Schedule D, paragraph 1 and Schedule H. As for Schedule D provisions, protection is given to the extent that technical information received by one party is considered by the other to be confidential or proprietary. Is there any objective way of determining this unless the information is written down and designated as confidential as contemplated in the Digital Agreements? To the extent that protection is given by Schedule D, the covenants appear to be adequate to cover all aspects of what should be covered in the nondisclosure provision.

(d) Schedule H is more specific. This states expressly that all information given by MTX relating to the U.S. Sprint proposal response package and subcontractors agreement is deemed confidential.

Microtel's use of the information is restricted to purposes of those agreements and "internal evaluations". There is an absolute prohibition on disclosure, and prohibition on reproduction other than for internal purposes, and a covenant to provide security.

12. Paragraph 19 and Appendix J (which are identical) set out what are to be U.S. Sprint's responsibilities. Are these sufficiently described? If they are not in sufficient detail, they will be difficult if not impossible to enforce because the interpretation of U.S. Sprint's responsibilities will then depend on the intention of the parties, as expressed in the contract or as may be implied from the contract. Other than for the responsibility of payment, there are no express or implied responsibilities undertaken by U.S. Sprint other than what is here. (see also Part III, question 2)

13. Presumably the changes and specifications made by U.S. Sprint form part of the details under 19.1 to have been provided within 60 days. That would make the deadline approximately the end of July. To the extent that U.S. Sprint did not provide those changes until after the end of July, MTX would have a corresponding delay in its obligation to deliver. There does not appear to be any express

agreement as to what change in delivery dates is to be allowed to MTX by reason of U.S. Sprint's delay. If a further 60 days is allowed, the first delivery date would only have been extended to the end of September, and the next due date would be the end of November.

14. Section 3 of Appendix C describes the lease payments for equipment leased to U.S. Sprint under Phase I. However, there are no provisions for the terms or conditions of lease, other than payment by U.S. Sprint. Under the terms of the Digital lease agreement, on the other hand, MTX's obligations for 12 months are extensive. Responsibilities included are to safeguard the equipment, maintain the equipment, insure the equipment, and assume all risk of loss, in addition to the other provisions discussed previously. As these are not assumed by U.S. Sprint, MTX remains primarily responsible for the leased equipment.

15. As for Section 4, Appendix C, payment dates are dependent upon the U.S. Sprint purchase order. The only document designating the time frame for giving of the purchase order by U.S. Sprint is Appendix G. Appendix G is referred to in paragraph 3 of the Hardware Purchase Agreement, but only in terms of being binding on MTX for delivery dates. There is no express covenant by U.S. Sprint to meet the dates set out in the implementation schedule.

16. Furthermore, at Section 4 Appendix C, paragraph 2 provides that title is to transfer at the time that U.S. Sprint issues a certificate of acceptance. At paragraph 4 of the Hardware Purchase Agreement, it states that title is to pass only upon full payment. As set out at Section 4, full payment does not occur at the same time as the giving of the certificate for acceptance. There are not any express provisions in the Hardware Purchase Agreement dealing with the priority to be given to any section of the agreement so as to resolve this inconsistency.

17. As for Appendix D, are the tests and criteria sufficiently clear as to the parties responsibilities and as to applicable time frames? Of course, as set out in the main agreement it is entirely at U.S. Sprint's discretion as to whether the specifications are met. (see Part III, Question 5 re: consequences of non-compliance)

18. We did not review in detail Appendix H, definitions, and are assuming that they have been reviewed by a person familiar with the technology to ensure that they are complete and accurate.

B. Software Licence Agreement

1. This agreement is not dated. This in itself does not render the contract not enforceable, but to the extent that the date is important for the determination of whether or not certain time frames have been met, evidence would have to be given establishing exactly when the contract was actually signed by both parties.

2. Note that "software" is defined as excluding software normally associated with the sale of hardware. What does this exclusion contemplate, and is this in any way inconsistent with the other terms of this transaction? Note also the inclusions in the defined term according to paragraph 1, including in particular improvements, additions or modifications.

3. Paragraph 1 distinguishes between the Software consisting of the object codes and related documentation and the Source Code and related documentation. Are those items readily distinguishable as to what is escrowed and what is licensed?

4. With respect to nondisclosure, there is an express recognition at paragraph 1 that title to the original and any reproductions of the software remains in MTX.

5. At paragraph 5, U.S. Sprint agrees after tests are met to pay fees and charges specified in Appendix C, contingent upon performance by MTX of its obligations to date of payment. Question what specific obligations MTX has between acceptance and payment? Does this mean that if an event of default should occur in the interim, U.S. Sprint is not then obliged to pay for what it has been provided? To what extent does this relate to representations or warranties, given other than the obvious relation to the representation as to defects in workmanship and materials for a period of three months discussed at paragraphs 9 and 10 of the agreement?

6. Regarding paragraph 7, is there any problem in distinguishing between modifications to ensure compliance with prescribed specifications, improvements to improve efficiency, and improvements which change the basic program function? Each of these is of course treated differently under the agreement.

7. There is expressly provided at 8.6 a survival of obligations under specific paragraphs beyond the termination of this licence agreement. As there is no such express survival clause under the Hardware Purchase Agreement, the implication is that it is the intention of the parties that obligations under that agreement do not survive. Of concern

particuarly are obligations for payment, and nondisclosure of confidential information.

8. At paragraph 7 there are specific requirements to provide modifications. At paragraph 13 of the Hardware Purchase Agreement there are specific requirements to provide documentation relating to both hardware and software. The two paragraphs are not consistent as they relate to the software. Question which governs?

9. At paragraph 9, MTX has limited its warranty as to the software for defects in workmanship and materials from three months from date of acceptance. There is an express disclaimer of any other warranties. However, 8.1 includes as a deemed default, defects exhibited over a 3 month period at any time during the currency of the agreement.

In the Hardware Purchase Agreement, there is no similar express disclaimer of any warranties in addition to those given. Again, the implication is that there is no such limitation on the warranties given by MTX on the hardware.

The corresponding software warranties of Digital are contained in Schedule E, paragraph 5.2 that Digital Supported Software conforms to product description applicable at time of shipment. All other Software is "as is" and no further warranty applies. The Microtel Software warranty at Schedule D paragraph 15 is similar.

10. As for Appendix F regarding modifications requested by U.S. Sprint, this is really an agreement to agree "in good faith" and is therefore probably not enforceable in the absence of agreement between the parties, particularly since the subject matter and other major items of agreement such as price are not yet specified. It should be noted, however, that at page 2, paragraph 4 of Appendix, U.S. Sprint does get a temporary exclusive license on the software development.

There is a cross provision whereby the software agreement may be terminated upon termination of the hardware and Software maintenance agreement, but no cross reference with the Hardware Purchase. The clause operates only in favour of U.S. Sprint.

At 12.2 of the hardware and software maintenance agreement, a broader cross termination clause gives U.S. Sprint only a right of termination upon the termination of "an underlying hardware or software agreement". Similarly, that agreement purports to allow U.S. Sprint the right upon the termination of the maintenance agreement to cancel the other agreements. MTX has no such right.

C. Escrow Agreement

1. The only parties to the escrow agreement are MTX, U.S. Sprint and Data Securities International. That being the case, these are the only parties which can be bound by it, except to the extent that Digital or Microtel expressly assume obligation for similar responsibilities under their own agreements. Since the escrow agreement with U.S. Sprint does not form part of the Digital subcontract, any provisions in the Digital agreement whereby responsibilities to U.S. Sprint are assumed do not relate to the escrow agreement.

2. Escrowed materials as defined at paragraph 1 are said to include the material described in Appendixes A and B to the Software License Agreement. Is the language of these Appendixes sufficient to differentiate between what is escrowed and what is released directly to U.S. Sprint under the license?

3. The default provisions triggering release from escrow as described at paragraph 3 are not necessarily the same as under default other U.S. Sprint agreements giving rise to possible termination. For example, at (a)(i) MTX may be in default if defects are not corrected 30 days from notice. Under 8.1 of the License Agreement MTX is allowed three months to attempt to remedy the defect. The apparent

result is that after 30 days the Excrowed Materials may be released to U.S. Sprint, although U.S. Sprint does not yet have the right to terminate. Should it elect to terminate, the License Agreement requires that all materials be returned to MTX.

The cure period of 30 days for default in Maintenance at (a)(ii) is consistent with the Maintenance Agreement.

Should the License Agreement be terminated prior to any release of Excrowed Materials, MTX may require return of its materials provided it canfurnish U.S. Sprint's confirmation of the termination (paragraph 4).

If Escrowed Materials are released prior to termination of the License Agreement, the Escrow Agreement ceases to be applicable and the terms of the License Agreement would then govern (paragraph 7).

4. **There is a specific arbitration of dispute clause under this agreement, relating specifically to any dispute in the right of U.S. Sprint to release of the Escrowed Materials.** This provides an expeditious resolution of an urgent situation. **It should be noted that the laws of Kansas govern.**

5. No similar arbitration provisions appear in the other agreements. All other disputes must therefore be settled or resolved in the courts.

6. Attached to the signed copy of the escrow agreement containe in the binder is a letter from U.S. Sprint with a copy of a single page attached which purports to be an amendment to the agreement. Presumably the attachment was provided by Data Securities. In the absence of any indication that it formed part of the contract when signed, it cannot be binding upon the other two parties as it purports to be.

7. Data Securities may be required to examine the Escrowed Material (par.10). However, the Escrow Agent makes no covenant not to disclose the material except in accordance with this agreement.

D. Hardware and Software Maintenance Agreement

1. Regarding the term of the agreement, the reference to paragraph 13 at paragraph 1 should be to 12 regarding default and termination. Note also that although a one year term is set, MTX is obliged in any event to give 90 days written notice to U.S. Sprint prior to expiry.

2. At paragraph 3.1, as noted previously, it would appear that MTX is obliged to maintain service whether or not payment is being made as contemplated in the agreement.

3. MTX is obliged to perform 24 hour, 7 day maintenance including scheduled preventative maintenance, remedial maintenance, and a provision of maintenance materials and test equipment on both hardware and software. Specifically on software problems, they are to provide telephone advice for 24 hours, and within the next 24 hours be on site if necessary. With respect to hardware problems, on-site service must be available within 6 hours if telephone service is not sufficient.

The DEC Service Agreement with Digital does provide for 24 hour 7 day service for hardware. It is not clear the extent to which scheduled preventative maintenance is included. Paragrapn 7 provides only for such maintenance "according to equipment standards specified by Digital" and it remains a question if those standards are consistent with the MTX obligation. Also, the response times to be met by Digital depend upon the distance of the nearest Digital office. The range can be anywhere from 4 hours to 16 hours, 4 hours being if there is an office within 100 miles. MTX's exposure on this covenant would therefore depend if there were an office within that range. It should be noted from the last provision of the DEC Service Agreement that specifically it does not include applicable travel charges, reconfiguration of equipment or coverage unlocally observed Digital holidays, none of which are excepted by MTX at 4.2 of its Maintenance Agreement. Question also the extent to which the Digital Agreement includes materials at paragraph 4 consistent with MTX obligations at 3.1 as limited by 4.2.

As for the Digital Software Service Agreement contained at Schedule H, the same scheduled preventative maintenance does not appear to be included, and on-site support is available only "during contracted hours of coverage". Question what those hours are in this instance? If the equipment is greater than 50 miles from a service office, additional monthly travel charges apply. After one year, Digital reserves the right to discontinue software service on certain products.

The Microtel Hardware Maintenance Agreement in draft (Schedule F) is also for one year. The hardware to be included within the Maintenance Agreement is specified at Appendix A. Question if this includes all the hardware supplied by Microtel? If not, there would be no maintenance obligations with respect to items not specifically listed, unless added by mutual agreement. Maintenance is 24 hour per day 7 days a week and specifically includes on call remedial maintenance and provision of materials and testing equipment but does not appear to include scheduled preventative maintenance. The locations of the equipment are also specified and Appendix B would appear to be consistent with Appendix B of the MTX/U.S. Sprint agreement. Microtel's response times on the hardware service are the same as the U.S. Sprint contract.

Microtel's obligation to pay the cost of parts and labour is limited to 90 days from the date of delivery. Note that the warranty period to which MTX is bound is 90 days from acceptance. Also, Microtel may use either new or refurbished parts. MTX is obliged to use new parts.

A further apparent inconsistency appears at 3.3.1 and 3.3.2 which states that Microtel absorbs the cost of replacement of parts for 90 days from delivery, and thereafter replacement parts during the warranty are subject to a service and shipping charge. Under paragraph 15 of Schedule D of the subcontract, the warranty on hardware is to be 12 months from final acceptance, but not exceeding 15 months from delivery. Under 15, Microtel may charge transportation and packing costs only to MTX.

After the warranty period, Microtel charges for labour and parts costs as well as service and shipping (3.3.3), whereas at 3.3 of its agreement MTX is responsible for those charges.

The miscellaneous materials excluded by 4.2 of the Microtel Hardware Maintenance are identical to the MTX exclusion.

4. In the software related portion of the U.S. Sprint Maintenance Agreement, it is specifically recognized that MTX may be called upon for an error not within the software itself. In that instance MTX's usual rates are payable for having come up, plus expenses. There is no such recognition with respect to hardware related problems.

This raises the whole question of how you distinguish whose equipment is at fault, whether or not that is readily determinable, and whose responsibility it is to determine that.

In the Microtel agreement, there is a separate invoice cost if it proves not to be Microtel equipment at fault. In addition, there is a specific responsibility of MTX to isolate this as a Microtel problem before calling upon Microtel.

5. A small inconsistency appears at 6.3 requiring a 60 day notice, whereas paragraph 1 requires a 90 day notice.

6. At 6.4, the consequence of failure to meet the response time is "prorata credit against subsequent monthly maintenance charges". It is not clear how this prorata credit is to be calculated.

Similar credits are not contemplated in the Digital Software Service agreements but do appear in the Microtel agreement.

7. Where MTX is required to make spare parts available for five years, there is no similar covenant on the part of Digital or Microtel.

8. Pursuant to 11.2 MTX is required to maintain the hardware to the level of mean system availability contemplated in Appendix A. Microtel expressly assumes that obligation at least for the warranty period pursuant to paragraph 6 of the subcontract by reference to page 22 of Appendix A. The Digital warranties, are limited to expressly what is provided in paragraph 5 of Schedule E to the Digital subcontract, but schedule B & A (pg. 22) may take precedence to render Digital liable.

9. Clause 15.2 has been pulled from the Software Licence Agreement and placed in this Maintenance Agreement. It is largely inappropriate, particularly with reference to licence fees.

10. There is a specific special right of termination given to U.S. Sprint at paragraph 19 requiring obeyance of all reasonable instructions and directions on the part of employees, servants and agents of MTX. Question whether or not Digital and Microtel come within the category of agents of MTX. Certainly neither are under the same obligation to MTX as appears at paragraph 19.

11. Appendix A, paragraph 1.0 is not entirely consistent with the warranties as to the hardware given in the Hardware Purchase Agreement, as discussed previously.

12. Note that the maintenance period in the MTX agreement with U.S. Sprint is one year beyond the warranty period (being 3 months for software and hardware other than Vax 8200 CPVS with one year warranty). For Digital, the Field Service Agreement is merely stated to be one year. The Software Service Agreemnt is similar. It is therefore not clear that the terms coincide. The Microtel Hardware Service Agreement commences 90 days from delivery rather than from acceptance as covenanted by MTX. This overlaps with the

warranty period of 12 months from acceptance but not more than 15 months from delivery. The Software Service Agreement of Microtel purports to be effective for one year 90 days from delivery also, and the warranty is identical to the hardware.

DIGITAL AND MICROTEL AGREEMENTS - MISCELLANEOUS COMMENTS

A. Digital Subcontract

1. Clause 7 purports to give to U.S. Sprint from Digital the warranties Digital gives to MTX. Probably this is not enforceable by U.S. Sprint as it is not a party to the contract. Nor is there any corresponding provision where Digital assumes any further warranties or responsibilities that MTX might have taken on.

2. At Schedule E to the subcontract with Digital, MTX grants a purchase money security interest in the equipment purchased to Digital. On the other hand under the Hardware Purchase Agreement MTX covenants that the agreement is free and clear of any encumbrances. There is therefore automatically a breach except to the extent that Digital will agree to discharge its interest.

3. Paragraph 4 of Schedule E to the Digital Agreement raises the question as to what happens if U.S. Sprint does not meet Digital's site preparation standards, the procedures and installation requirements of which are not specified in in this agreement. In addition the site must be available to Digital for installation within 30 days of delivery. As between MTX and Digital, the responsibility is of course

MTX's. As between MTX and U.S. Sprint the responsibility is only to meet MTX's standard specifications without reference to time frames. Even if MTX were to impose on U.S. Sprint Digital's specifications, MTX has in any event assumed a liability with respect to set time frames that it is not in a position to require of U.S. Sprint.

4. At paragraph 7.1 of Schedule E to the Digital agreement, the use of the Digital licensed software is restricted to original signal CPU or equipment configuration specified in the applicable SPD on which the software is first installed, and may only be copied in whole or in part for that equipment or configuration. If there are to be any copies, it is expressly provided that the Digital copyright notice or proprietary notice must be included. There is no such covenant which MTX can enforce as against U.S. Sprint.

5. 7.3 of Schedule E provides "source-licensed software requires the execution of a separate Software Program Sources License Agreement between purchaser and Digital". Is this applicable?

6. Relating to the confidentiality aspect, clause 7.5 states that software first made by Digital in the performance of a service for MTX may be used by Digital for any purpose.

There is therefore no limitation on whatever software Digital might develop for this specific contract.

7. In paragraph 10 of the Digital contact, Schedule E, a provision requires that Digital be given 30 days notice in the event of a move, that Digital give its written approval to the move and that MTX pay labour and materials for Digital attending at the deinstallation and reinstallation of the equipment and/or software. (A similar provision appears in the Microtel agreement.) Clause 10 of the Maintenance Agreement requires that U.S. Sprint notify and obtain MTX consent to any move. However, there is no clear reference in the U.S. Sprint contract to any requirement for the equipment to be moved which would allow MTX to recover these costs from U.S. Sprint.

7. With respect to the loan agreement regarding equipment loaned by Digital, generally MTX picks up all expenses and all risks from the time that that equipment is delivered by Digital to the carrier.

Please note that the maintenance contracts with both Digital and Microtel are for a set one year term, and appear to require notice as specified therein, both in the event of termination for default, or for termination at the end of the term specified.

C. Marketing Agreements - MTX/Digital - April draft with suggested amendments to June 9th/86

1. The agreement seems to contemplate that some of the marketing might be done through affiliates or subsidiaries of Digital, but they are not parties to this or to the nondisclosure agreement.

2. The responsibilities include considerable disclosure by MTX to Digital, without the same requirement for Digital to disclose to MTX. Even with the amendments suggested by MTX, there is not sufficient provision for control of the technical and marketing information required to be exchanged. It is difficult to understand if 6.1 is true (ie. each party is responsible for their own marketing), why Digital requires all of this detailed information. At clause 8 MTX goes so far as to provide at no cost its modifications and enhancements, and again there are no reciprocal covenants by Digital.

In view of those requirements and questions, the nondisclosure provision at Item 9 must be viewed very closely:

a) Is there any difficulty in distinguishing between MTX developed software and Digital software? The difficulty is compounded when there is an express recognition at paragraph 10 that Digital might develop similar software;

b) In view of the extent to which Digital is entitled to use information provided by MTX, the restriction of copying or distribution for those purposes provided in the agreement is really no restriction;

c) The nondisclosure agreement attached at Appendix C is subject to the same limitations discussed with respect to the existing contracts with Digital regarding time limits, conditions to be met to come within confidential information definition, and the express exclusions.

3. Why is the warranty as to title at clause 11 of the Digital agreement not reciprocal?

4. At 13.4 Digital is allowed to use MTX name and software name for its promotions. Should this not be on a case by case basis, be mutual, or be prohibited rather than permitted?

D. MTX Microtel Marketing Contract - includes memorandum of understanding signed July 3rd, 1985, with reference to the 1983 marketing agreement which in turn includes a marketing agreement with AEL Microtel

1. Paragraph 4(d) of the memorandum of understanding contemplates that MTX will share its profits with Microtel if Microtel helps it get a contract, even if Microtel products are not used. If there are truly joint promotions here, why is this not reciprocal?

2. In any event, it is not at all clear what the sharing of profits is to be, or in fact what the sharing has been pursuant to the 1983 agreement. The only reference to sharing of money is in the 1983 business plan which reflects the approximate revenues to each of the parties should there be a sale.

3. 4(e) requires MTX to give support at its cost. Again why is this not mutual?

4. At paragraph 6 and 7 there are restrictions on the promotion by each party of its own product outside the Microtel/MTX relationship, but Microtel is restricted only to the extent that the system is employed with system 51 equipment. MTX is restricted altogether.

5. Pursuant to this agreement, for a five year period (ie. to April 14, 1988), Microtel is appointed an exclusive agent for MTX for the network administration system in most countries of the world. For an additional three years pursuant to paragraph 16 if MTX sells NAS or Microtel type product, the seller is to compensate the other as if the other had earned on the sale under this agreement. Again question what the sharing of revenue is, since it does not appear to be expressly provided for in that agreement.

6. There was the prior agreement to prepare a business plan and the business plan itself, both entered into with AEL Microtel Limited in January, 1983. What is the relationship between AEL and Microtel itself? Little actually turns on the question since the only covenant is to produce a business plan and to enter into negotiations in good faith.

PART III - QUESTIONS POSED BY COOPERS & LYBRAND

1. Is the U.S. Source Code Escrow Agreement binding on Digital and Microtel?

As indicated in Part II, the Escrow Agreement between MTX and U.S. Sprint is not binding on Digital and Microtel as they are not parties to the agreement. As of October 17th it was contemplated that MTX and Microtel execute a similar Escrow Agreement which expressly contemplates the further deposit with U.S. Sprint. The Digital agreements have no such provisions, and appear to require a separate Source Code license prior to such an escrow by MTX.

2. Are U.S. Sprint's obligations under paragraph 19 of the Hardware Purchase Agreement sufficiently clear?

As noted in Part II, we also were concerned that these responsibilities are ambiguous and do not provide sufficient detail as to the time frames in which and the specifics of these obligations to be met. In particular, one should be concerned about 19.2 regarding the provision of suitable environment for installation of the equipment. This of course is an obligation which MTX in turns assumes to both Digital and Microtel. There is certainly nothing specific in the U.S. Sprint contract other than to refer to MTX's standard specifications. At the very least MTX must be careful to specify to U.S. Sprint exactly those conditions required by Digital and Microtel.

(see Comment in Part II re: MTX commitment also to time frame to Digital)

3. What if the Government decrees that MTX may no longer pursue this project?

As between MTX and U.S. Sprint, the force majeure provisions specifically contemplate decrees of Governmental bodies which prevent parties from performing their obligations. MTX must give notice immediately and do "everything possible" to resume performance. At that point the agreement is immediately suspended. If nonperformance continues for 15 days from notice, it is the right of the other party or U.S. Sprint to terminate. This provision does not expressly state that in such circumstances the agreement may be terminated without recourse to MTX. We would suggest that by implication the effect is the same as MTX is excused from performance for the duration of the decree or indefinitely. Unfortunately, there is not express provision dealing with what is to happen in the event of termination. To the extent that title has not passed, presumably the effect would be the same as if the tests were not acceptable and both parties would be restored to their original positions.

The identical provision appears in the Software Licence and Hardware Purchase Agreement as well as the Hardware and Service Maintenance Agreement. Specifically in the Hardware and Software Maintenance Agreement, 12.5 provides that each party would then recover its own property.

Paragraph 15 of the Lease Agreement with Digital expressly excludes any excuse from performance by reason of such a government decree.

Nor are there any similar force majeure provisions under the Digital Purchase Agreement standard terms at Schedule E. As noted in Part II, there is also an express cancellation charge at Item 12 for between 5 to 10 percent of the equipment list price depending upon when notice of cancellation is given.

(see also qn. 4 re: default under Digital contracts)

There are no force majeure provisions under the Digital Service Contracts.

With regard to the Subcontract with Microtel, paragraph 12 of Schedule D specifically excuses failure by reason of any government requirement beyond the control of the party involved. In that event the property of each party would be restored to each other. The force majeure provisions of the service agreements are identical to the force majeure provisions of the U.S. Sprint contracts.

4. What if MTX becomes insolvent?

Aside from the practical question of determining that, as noted in Part II, this expressly gives U.S. Sprint the right to terminate the agreement and is treated as a breach. U.S. Sprint may not however claim for incidental, consequential or special damages such as loss of income, but might claim for not only what payments had been made, but other expenses it had been put to by reason of the contract which MTX had breached. The same provisions appear in both the Hardware Purchase and Software Licence Agreements. A similar provision is included in the Maintenance Agreement, and 12.5 would govern to direct that the property of each party be restored to it.

There are no similar provisions in the Digital sub-contract. The only termination provided for is failure of Digital to perform (paragraph 9). MTX would therefore be obliged under the provisions of the lease, and in the event of default of payment there is an acceleration provision where the entire amount be become immediately due. Note that insolvency is under the lease a specific default (12(e)). Digital could also of course take whatever steps might be necessary to recover its property and any payments of rent already made would be forfeit. Digital might also claim for the expenses of sale of the equipment, expenses of retaking, repairing, and legal fees as against MTX.

Under the Microtel subcontract as amended, paragraph 7 would no longer include any specific reference to insolvency, but only default in performance. In that event, the amendments specifically states that Microtel shall be entitled to whatever remedies may be available to it at law. Specifically however MTX is not liable to Microtel for development costs of its proposal (paragraph 10), and is precluded from asking from consequential, incidental or special damages, or for anything beyond the subcontract price (paragraph 6).

5. What if in U.S. Sprint's judgment the system does not meet performance and product specifications?

If this determination is made prior to acceptance, and MTX is not able within the time frames set by the

Hardware and Software Agreements to make the system comply, then U.S. Sprint's sole remedy in each case is to be reimbursed all payments made under the agreement, and in turn it must return all property to MTX.

As for the Digital contracts, it would depend upon whether or not the failure to meet the test was because of the performance of Digital's products, or not. Certainly the lease would not in any event be affected. As for equipment purchased from Digital, the question would be if the failure were a breach of a specific representation or warranty made by Digital. If so, the stated responsibility of Digital is to repair or replace until it does conform. It does not entitle MTX to terminate. For MTX to claim for damages, damages are limited to $1,000,000.00, and in any event would not include loss of data, profits, use of products, or incidental or consequential damages, and must be brought within 18 months. If the nonperformance were the fault of another party, MTX would certainly have no excuse to terminate and at the very least would be liable for cancellation charges for any products not already delivered. Please note that if MTX terminated the Digital Purchase Agreement without cause, the limitation on liability refers only to Digital's liability, and by implication MTX is then potentially liable for any damages which Digital may incur.

Digital loan agreement - all warranties excluded and MTX indemnifies Digital.

Paragraph 10 of the Microtel subcontract deals specifically with the situation where the U.S. Sprint contract is terminated because Microtel failed to fulfill its obligations under the subcontract. In that event MTX's exclusive remedy is to return the hardware and software to Microtel and to reimbursed for all payments made by Microtel.

6. What if U.S. Sprint is unable to provide MTX with specifications for the Ericsson Fibre Optic Transmission System?

The question appears to assume that U.S. Sprint is not able to meet its obligations for reasons beyond its control. In that case, U.S. Sprint is excused indefinitely from performance under 9.3, provided that it gives notice to MTX and does everything possible to resume performance. It is then open to MTX after 15 days to terminate the agreement. MTX could not claim incidental, consequential or special damages, and as stated above it is a question if its exclusive remedy is to terminate and be restored its property because of the operation of force majeure, or whether it would be entitled to sue for other damages which it might incur.

7. What if any one of MTX, Digital or Microtel are unable to meet contracted delivery dates?

In every agreement, the deliver for causes reasonably within its control. If the party is at fault in meeting those delivery dates, that would be a breach of the agreement, and subject to the limitations on damages which might be claimed would give rise to a suit for damages. If Microtel or Digital should fail to deliver to MTX, presumably MTX could rely on the force majeure provision to excuse itself from performance.

8. What if there is failure of either Digital or Microtel hardware/software to perform.

Prior to acceptance, the remedy at least in the case of U.S. Sprint, MTX and Microtel is to restore property to each other. As discussed above, the Digital standard terms do not have the same limitation, but there is a representation that the products will meet certain performance levels and to that extent Digital would be in default. The problem is that once the warranty period kicks in, then the obligation of Digital and Microtel is to repair or replace solely. As noted in paragraph 2, there is an express provision in 9.1 of the Hardware Purchase Agreement with U.S. Sprint that continual problems will give U.S. Sprint the right to call the agreement in default. There is no corresponding provision for Digital and Microtel. A similar provision appears in the U.S. Sprint Software Licence Agreement over a period of three months, and again there is no corresponding provision from Digital and Microtel. As a consequence, although MTX may be declared to be in default and therefore liable to damages, it is a question whether or not the failure to come up to the warranty standards in the case of Digital or Microtel is so substantial as to be a breach of the contract entitling MTX to a remedy.

As between MTX and U.S. Sprint, the agreements acknowledge the subcontracts with Microtel and Digital, but expressly designate MTX as being primarily liable.

9. **What if Digital, Microtel or U.S. Sprint pursue their own software development based on specifications developed by MTX, but independent of MTX.**

The nondisclosure covenants are discussed at Part II. Apart from the legal problems, there is the very practical problem of determining the extent to which the party at fault can excuse itself by saying that it has developed the software independently.

In the U.S. Sprint agreements, to the extent that it can be established that confidential information was received, there is an absolute prohibition on use without authority in writing.

In the case of the Digital agreement, Schedule 1, provided firstly that it can be established that this is information in writing and provided as contemplated in Schedule I so as to meet the confidentiality test, such covenants as exist are limited to 2 years. Even within that 2 year period, it is open to Digital under 2(b) to defend on the basis that the information was independently developed. It would be a question of what evidence were available to establish the proof of whose was the original development. To the extent that the specifications clearly are of MTX, and are provided as contemplated in Schedule I, the prohibitions on Digital are limited to two years, and paragraph 5 specifically acknowledges Digital's rights to develop similar systems.

In the case of Microtel, to the extent that it can be determined that the information or material was provided pursuant to this subcontract either orally or in writing and is therefore confidential information, Microtel is expressly prohibited from using it to benefit itself or others except for the purpose of internal use.

To the extent that the nondisclosure provisions are breached, those parties would of course be liable in damages, and then the question then becomes the extent to which the limitations of liability provided for in the agreements would apply. The Digital and Microtel nondisclosure agreements are separate from the subcontract and related contracts where the limitations appear. In the case of the U.S. Sprint software licence it is not and the limitation at paragraph 13 in terms of incidental, consequential or special damages would therefore apply.

10. What if third parties are engaged by U.S. Sprint to service hardware and software and are not adequately trained to do so?

A) As between MTX and U.S. Sprint:

The Hardware and Software Maintenance Agreement contemplates that U.S. Sprint might secure service from an alternate source only in special circumstances (6.5). Otherwise we are talking repairs within the warranty period or repairs by MTX pursuant to the Maintenance Agreement. To the extent that work is done on the hardware or software by third parties and it prevents the hardware or software from properly performing, that should fall within the force majeure with respect to the warranty provisions, and specifically would vitiate the maintenance responsibilities of MTX pursuant to 4.1 of the Maintenance Agreement which excludes malfunctions caused by the deliberate or negligent acts of persons other than MTX or causes external to the hardware and/or software.

B) As between MTX and Digital:

In so far as the leased equipment is concerned, MTX is entirely responsible to ensure that it is properly maintained. With respect to equipment purchased from Digital, clause 5 of Schedule E states expressly that the warranties given are contingent upon proper treatment and use of the product. Under the loan agreement, MTX is responsible to ensure proper maintenance.

The DEC Service Agreement specifically excludes services required due to unauthorized attempts by parties other than Digital to repair the equipment. Similar service limitations appear at the DEC Support Service for software. MTX would therefore clearly be responsible for those additional charges to then repair the equipment properly. If U.S. Sprint has breached the equipment in bringing in third parties other than as provided in its Maintenance Agreement with MTX, MTX could then claim these additional costs to Digital as damages.

Service limitations similar to the Digital limitations are contained at 4.1 of the Hardware and Software Maintenance Agreements entered into with Microtel. To that extent, the regular maintenance charge would not cover the cost of subsequent repair, would be borne by MTX, and might be claimed from U.S. Sprint.

11. What if U.S. Sprint is sued by a third party?

At 8.1 MTX agrees to indemnify U.S. Sprint for any damages or related expenses claimed against it by a third party arising out of MTX's negligence or that of its agents. In that instance, MTX is entitled to conduct the defence, and U.S. Sprint will cooperate.

There are then two outstanding questions to be determined. Firstly whether or not the fault is as a result of the negligence of MTX, and secondly if it is as a result of any negligence of any agent of MTX.

An agent is of course somebody who is specifically represented as having the authority to act for MTX. The contracts with U.S. Sprint, on the other hand specifically recognize that this is a contract/subcontract situation. There is therefore some real question whether or not Digital and Microtel would be considered at law to be agents of MTX so that their actions or the actions of their employees or servants would be actions for which MTX was responsible.

To the extent that the cause the loss can be said to be one for which MTX is liable, the only limitation in MTX liability to U.S. Sprint is the exclusion of consequential or specified damages.

If Digital was the cause of damages for which MTX was held to be responsible, one would have to ascertain whether or not it was the result of product or service, and if of product whether this was a leased, purchased or loaned product. The different agreements provide as follows:

a) **In the case of leased equipment**, there is no specific provision for an indemnity and in fact the last two sentences of paragraph 6 purport to exclude liability with respect to defects or inadequacy of the equipment of all kinds. At paragraph 9, lessee MTX **indemnifies** Digital for all liability arising out of the ownership of the equipment during the period of the lease, and is responsible to maintain liability insurance for that;

b) With respect to equipment purchased from Digital, if the cause of loss is established to be Digital's fault or negligence, the concern would be the limitations of liability already discussed as they appear at paragraph 13;

c) with respect to service faults, there are no express limitations on liability if Digital in the schedules or in the subcontract of which the scheduled service provisions form part.

The schedule to the subcontract with Microtel limits Microtel's liability to negligence for its agents and servants acting in the course of employment under the subcontract. There are certain limitations to the liability and a requirement that prompt notice be given and Microtel be entitled to defend. In any event Microtel is not to be responsible beyond the price of its subcontract.

There are some separate provisions dealing with infringement actions by third parties. At 8.2 of the

Hardware Purchase Agreement, MTX has a number of alternative available to it, ie. to repair, modify, or obtain a licence for the hardware to avoid the infringement, or if all else fails to return a prorata portion of the sale price of the hardware to U.S. Sprint. Question how that prorata portion is calculated since the reference to licence would appear to be inappropriate in this context. A similar provision appears at 12.2 of the Software Licence Agreement.

As between MTX and Digital, for leased equipment as discussed above there is disclaimer of any kind of responsibility related to the equipment. With respect to purchased equipment, clause 6.1 of Schedule E states that Digital will defend any such claim at its cost provided that it is properly notified. Please note that Digital's options include repair or replacement, or a credit for the product "as depreciated" and acceptance of their return. Note also that if the infringement relates to the combination of products including those not furnished by Digital, Digital disclaims any responsibility. With respect to loaned equipment, there is no provision relating to infringement and only paragraph 4 dealing with the exclusion of warranties of fitness, limitation from consequential damages, and what purports to be an indemnity by MTX requiring MTX to indemnity Digital for any claim relating to a product loaned by Digital. Question if that wording would be sufficient for

Digital to argue that MTX thereby assumed responsibility in infringement cases?

With respect to Microtel, paragraph 5 includes an express indemnity to MTX for infringement claims, allow certain options including licence, repair or modification to Microtel, and qualifies its covenant to indemnify to cases where it is promptly notified, and entitled to carry the defence. Furthermore, the indemnity does not apply to a combination of Microtel and Non-Microtel finished work.

7. What if MTX assigns its rights in its portion of the TNMS software.

There is an express prohibition on the assignment of the U.S. Sprint contracts. Similar restrictions apply in respect of the Digital and Microtel agreements, not to the subcontracts themselves but as to the agreements under the subcontracts with Digital and Microtel. On such a sale, MTX could not therefore assign its interest in these contracts without the prior written consent of the other three parties.

As assignment by MTX without consent may constitute default under the Escrow Agreement with U.S. Sprint (paragraph 3(a)(iiii)).

APPENDIX III

AN EVALUATION OF MICROTEL LTD. IN TERMS OF THEIR PARTICIPATION IN THE CONTRACT BETWEEN MTX AND US SPRINT COMMUNICATION SERVICES INC.

Prepared by:

William G. Hutchinson & Company Limited

October 24, 1986

hutchison

SUBJECT:

AN EVALUATION OF MICROTEL LTD. IN TERMS OF THEIR PARTICIPATION IN THE CONTRACT BETWEEN MTX TELECOM SERVICES LTD. AND U.S. SPRINT COMMUNICATION SERVICES INC.

CLIENT:

THE COOPERS & LYBRAND CONSULTING GROUP

OCTOBER 24, 1986

William G. Hutchison
President

William G. Hutchison & Company Limited
2025 Sheppard Avenue East, Willowdale, [illegible]
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INTRODUCTION

Microtel Limited and its subsidiary Microtel Pacific Research Limited, (MPR), will be contracting with MTX Telecom Services Ltd., (MTX), to develop and provide a surveillance and control sub-system and part of the fault processing component of MTX's Phase 2 contract with U.S. Telecom Ltd. (UST). The UST contract is in the process of being transferred to U.S. Sprint Communications Limited following a merger between U.S. Telecom and GTE Sprint's Communication Services.

William G. Hutchison & Company Ltd. was retained to evaluate the roles of Microtel and MPR in the project in terms of their proposed development effort, deliverables and the relationship between MTX, Microtel and MPR. This report describes the results of our investigations. A summary of our meetings with staff from Coopers & Lybrand, MTX, Microtel and MPR is attached as an Appendix to this report.

The Coopers & Lybrand Consulting Group, (C&L), has included a good description of the U.S. Sprint project in their report on the project. Phase 1 of the project is complete subject to customer acceptance which is anticipated in the near future. Our focus was on Phase 2.

There are two principal components in the Microtel/MTX relationship, (Microtel will be used hereafter to include Microtel and MPR). One component is a contract for product development, the other is the business relationship between the two organizations. Both of these were under discussion on October 9th and 10th when we visited Microtel. Because of the uncertainty we can only comment on the relevant factors as they existed inconclusively at that time. We have also offered some opinions about the ideal outcome of the negotiations. Because of the negotiations between Microtel and MTX, Microtel was naturally reluctant to disclose details of their technical development plans, many of which are also commercially confidential.

Business Relationship

It appears that Microtel will be responsible for most of the new development work on Phase 2. In fact Microtel states that they will be responsible for 80% of the development work and MTX will handle 20%. This ratio was not confirmed by MTX nor were we able to obtain sufficient information from Microtel to confirm the estimate although we are satisfied that Microtel will be responsible for the major share of the work.

Microtel has now asked to be designated as the design authority and technical prime with the customer. They believe that because they will be controlling such a large proportion of the project, they should provide overall technical direction. They also believe they have better technical management skills at the present time.

We are inclined to agree with both assessments but point out the problem from MTX's standpoint. At the end of this project Microtel will have a product of their own but MTX will only have part of a product. MTX is at an earlier phase of organization and business development than Microtel but it was MTX who successfully negotiated the U.S. Sprint contract. MTX now wishes to use the contract to lever themselves into a new business activity; the sale of network management systems.

If MTX is to achieve its business objective it is extremely important that the long term business relationship between MTX and Microtel be defined, even before technical contract details are finalized; particularly if Microtel is to become the design authority for the complete project. The business relationship must address all aspects of the MTX, Microtel roles during development and delivery of Phase 2 as well as future marketing responsibilities.

Technical Component of the MTX, Microtel Relationship

Technical specifications for Phase 2 of this project were revised subsequent to the U.S. Telecom/GTE Sprint merger. The revised specs were officially forwarded to MTX on September 24th, 1986 and a revised quotation was requested by October 10th. Subsequent to receiving the specs MTX and Microtel have been negotiating costs, schedules and mutual development responsibilities to meet the new specs. All of these terms will likely be substantially different than the terms that were originally quoted to U.S. Telecom.

MTX obtained an extension to the October 10th date; we are not aware of the new date.

There is a major discrepancy between realistic delivery schedules and those originally quoted schedules for Phase 2. We understand that Microtel has also substantially revised its cost quotation to MTX by more than the revised technical specs would justify. As of this date we are not aware of the result of those negotiations.

OBSERVATIONS & FINDINGS

Our observations and findings are organized into categories as defined in the subheadings below.

1. **Business Relationships:**

- MTX, Microtel and Digital Equipment

MTX, Digital Equipment Corporation, (DEC), and Microtel have the combined ability to become a significant competitor in the market for Network Facilities Management Systems, (NFMS). Emergence of the Regional Bell Operating Companies, (RBOC's), the general growth of network traffic and the continuing development of new technologies is creating a substantial market for NFMS.

Microtel has been a hardware and software supplier in the remote surveillance and control component of this business. MTX, on the other hand, has implemented the Network Administration System, (NAS), which processes fault and alarm information and provides overall network management. Together, these products can provide a Network Facilities Management System. Microtel views the relationship with MTX as a strategic partnership because MTX adds the Telco experience and some important credibility to total system proposals.

Although MTX has systems management experience and part of a NFMS offering, it does not have a complete product without Microtel. However, it does have the key component (NAS) that the communication companies now intend to purchase. The RBOC's have already installed a reasonable level of surveillance equipment and are now looking for the final link; the network administration function.

Microtel claims to be interested in establishing a longer term joint business relationship with MTX but there will be difficulties. MTX and the Manitoba Telephone System have substantially different corporate cultures than Microtel. One is a publicly owned telephone utility trying to establish a new systems marketing and development capability. The other, Microtel, is an experienced private sector equipment and systems marketeer with proven research and product development capabilities. Microtel appears to view MTX as somewhat unsophisticated and inexperienced when it comes to systems sales and dealing with a customer. This may be natural because MTX is a relatively young organization.

In the U.S. Sprint project, Microtel wishes to become the design authority because they perceive they have the largest amount of development to undertake. They also have some lack of confidence in MTX's ability to manage the project from a technical point of view.

We tend to support the Microtel opinion at the present time. We believe that Microtel should be the design authority for this particular project but that MTX should protect itself by clearly defining some ongoing business relationships in contractual form. It will be important for MTX to continue its strategic objectives to participate in NFMS market after this project. We observed that both parties are slightly suspicious of each other's motives at the present time. Microtel is also concerned about the future survival and operation of MTX with the result that they are likely to be somewhat cautious in finalizing agreements for the future.

It is our opinion that both parties' strategy should be to devise the most efficient method of developing and delivering Phase 2 of U.S. Sprint to the customer's satisfaction. At the same time they should now define an acceptable future business relationship to allow themselves to move ahead to compete in the market as it develops if they are successful with Phase 2. A general marketing agreement was established in 1985 but further details need to be defined. For example, if Microtel becomes technical prime and design authority, should MTX remain as the overall prime contractor, or should Microtel assume that responsibility too? If Microtel does become general prime there should be significant guarantees of MTX's long term role as a consultant and supplier of NAS software to Microtel.

The relationship with Digital Equipment is not clear at the present time. We understand that negotiations are in progress between Microtel and Digital and between MTX and Digital. All three parties should clarify their positions. Digital Equipment is known to be increasing their focus on specific industry markets. Will they be an OEM supplier or do they wish to act as the prime marketing arm? We have not spoken with Digital at this point.

2. Financial Aspects of the Project

There is significant financial uncertainty in the contract between Microtel and MTX. Originally, Microtel through Microtel Pacific Research (MPR) contracted to deliver its portion of Phase 2, for $1.4 million; the original MTX contract with U.S. Sprint was priced at $3.5 million. Microtel claims that its originally anticipated development investment was $3.0 million which quickly jumped to $6.0 million when it was realized that a certain portion of the development work was supposed to be done by Microtel rather than MTX. We were unable to determine how the "misunderstanding" arose but were advised by Colin Holland, Microtel's Executive Vice President, that Microtel had decided to swallow the difference. Microtel had understood that they would obtain additional sales of Remote Terminal Units of between $6.0 and $9.0 million. The new specifications have lessened the certainty of those sales with the result that Microtel is negotiating to recover more development cost up front. MTX will have to re-evaluate its profit or loss (investment) in the project in terms of its long term objectives.

3. Project Development Factors

3.1 Specifications

We heard conflicting views at Microtel as to whether the specs were complete in all aspects. We do know that the interface spec to Ericsson's fiber optic facilities has not yet been defined. If MTX is to remain as prime contractor on the project, there should be a detailed independent review of development plans, schedules and resources prior to finalising contract terms.

3.2 Planning

Microtel was not prepared to provide us with a detailed project plan in terms of staffing, milestones and schedules and yet we understood they have quoted a new cost to MTX. In our view, MTX should obtain the detailed information that we requested before it agrees to terms. MTX should be allowed to understand and review Microtel's true development costs and plan because of the critical nature of the bid and the substantial size of Microtel's projected cost increase.

3.3 Management and Staffing

Microtel states that they have more than 70% of their staff in place and that they have all who are needed at the present time. They would not divulge to us their total estimated man effort for the project. We do know there will have to be a significant change in the completion schedules from those originally proposed. These changes are also under negotiation at the present time and will be subject to final discussions about some sort of phased offering to the customer.

We were impressed with Microtel's stated technical qualifications for project leadership. The Technical Development Manager and architect for the project apparently has ten years of relevant experience. He is a first level manager reporting to John Chung who is the design manager. Exhibit 1 is a brief organization chart showing the staff involved in the project. John Chung is design manager for U.S. Sprint and we understand he has a staff of 17 at the present time including the architect.

3.4 Prior Experience

We were told that the management and some of the staff of the U.S. Sprint group was also responsible for developing and delivering the Trans-Canada Radio Interface Monitoring and Management System (TRIMMS). From its description we believe that the project was at least as technically complex as Phase 2 of the U.S. Sprint project. Apparently it required one million lines of programming code which is an impressive project.

3.5 Development Methodology

We were unable to review the development methodology for the same confidentiality reasons as stated above. Once again, before MTX agrees to terms with Microtel we suggest that they should be thoroughly aware of all detailed design considerations by Microtel. If both parties view the business relationship as a partnership then they should work together in open fashion.

3.6 Estimating

Estimating for the original bid on this project was extremely faulty with respect to schedules and costs. For that reason we suggest that an outside expert should review all of the details before they are accepted and quoted by MTX management.

3.7 Technical Performance

We are confident that if the proper design authority and operational interfaces are established between MTX and Microtel then the project can be completed with minimum technical risk. The risk appears to be in schedules, costs and management of the project. There are commitments with respect to product availability and reliability in the U.S. Sprint contract. These are open to interpretation because of a lack of clear definition as to their meaning in the contract. Further negotiations with U.S. Sprint should include a more complete definition of the meaning of the terms.

3.8 Documentation

Once again we were not privy to plans for providing all of the documentation but do not believe it should cause a problem.

3.9 Testing

It is anticipated that systems integration will occur at MTX prior to delivery to U.S. Sprint. Test procedures need to be defined and the schedules for testing, remedy of errors and re-testing need to be clarified before commitments are made to U.S. Sprint. These are not clear at the present time.

3.10 Acceptance

The U.S. Sprint contract defines functional acceptance tests and anticipates a detailed definition of those tests, subject to mutual agreement. This is a normal clause but always creates some risk because the details of the acceptance tests are not usually defined prior to contract signing. This fact can provide a contract escape for the customer if there is unreasonableness by any party.

4. Risks

There are three major risks on this project: costs, schedules, and management of the technical interface between Microtel and MTX to ensure that development efforts can be integrated in an acceptable fashion.

Wildly optimistic scheduling commitments were made during the original contract negotiations. It will be up to U.S. Sprint to determine whether they will accept realistic revised schedules to match their revised specifications.

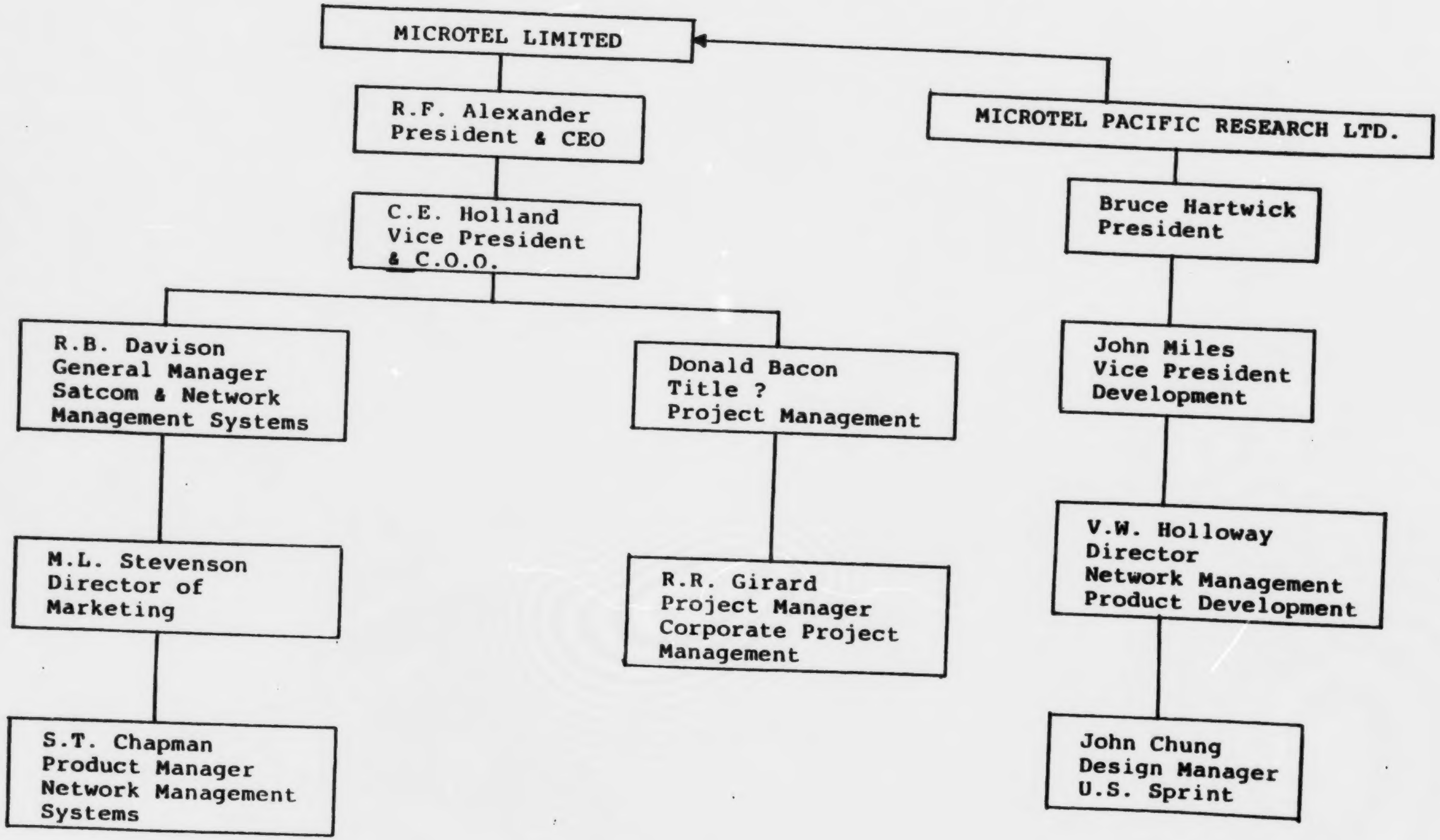
Cost and price changes for the project creates another risk. Microtel and MTX will each have to decide how much they are prepared to invest in this project. We are not aware of the outcome of those discussions.

The likely cost and schedule changes create a contract continuation risk. Some adjustment is realistic but reality may require adjustments that could allow U.S. Sprint to legally back away from the contract if they so desire.

Resolution of the technical management authority and establishment of a good working relationship between Microtel and MTX represents another risk. If the entire project is not directed by strong respected management it faces some significant risk.

Finally, there is the risk of not establishing a mutually profitable and continuing business relationship. The market is a vast one . MTX and Microtel have significant and unique contributions to make but they will need to clearly define their ongoing relationship in a manner that allows for mutual trust and profit. At present there is some uncertainty in this regard.

EXHIBIT 1


MICROTEL LIMITED
R.F. Alexander
President & CEO
C.E. Holland
Vice President
& C.O.O.
R.B. Davison
General Manager
Satcom & Network
Management Systems
M.L. Stevenson
Director of
Marketing
S.T. Chapman
Product Manager
Network Management
Systems
Donald Bacon
Title ?
Project Management
R.R. Girard
Project Manager
Corporate Project
Management
MICROTEL PACIFIC RESEARCH LTD.
Bruce Hartwick
President
John Miles
Vice President
Development
V.W. Holloway
Director
Network Management
Product Development
John Chung
Design Manager
U.S. Sprint

Outline of Key Personnel on U.S. Sprint and their Organization Positions

Note: The exact reporting relationship between MPR and Microtel may be slightly different from the one shown here.

OCTOBER 1986

APPENDIX

SUMMARY OF W.G. HUTCHISON's MEETINGS

Wednesday, October 8th, 1986 - Winnipeg

Participants: Ervin J. Malzer, Partner,
The Coopers & Lybrand Consulting Group (C&L)
Winnipeg

Gino Braha, Manager, C&L, Winnipeg
Dennis Hall, Principal, C&L, Mississauga

2:30 p.m. - 6:00 p.m. & 8:00 p.m. - 9:00 p.m.

I first met with Mr. Malzer who provided additional information about the project. We had discussed it previously by phone. We discussed my terms of reference which were to evaluate the Microtel Ltd. and Microtel Pacific Research Ltd. (MPR) component of MTX Telecom Services Inc.'s (MTX) contract with U.S. Telecom Inc. Under the terms of that contract, MTX is to supply a Total Network Management System (TNMS) to U.S. Telecom. Microtel is a subcontractor to MTX for a major portion of the TNMS; a portion consisting primarily of the network surveillance and control systems.

The attached Exhibit 1, copied from a C&L document provides a conceptual view of the TNMS product configuration.

I was asked to study relevant contracts and documentation, meet with and interview appropriate Microtel and MTX personnel and then to provide a written opinion about the project with respect to Microtel's role in it. C&L asked for an opinion on the degree of risk in the project in terms of system performance versus specifications, schedules, costs, staffing and management. My opinion was also solicited with respect to MTX's ability to manage its subcontractor, Microtel, and Microtel's view of the project in a strategic and business terms. Finally, I was asked to review the present status of the project.

During the rest of the afternoon I reviewed background material, contracts, minutes and specifications at C&L and MTX offices with Gino Braha.

Later that evening Mr. Malzer and I met with Mr. Dennis Hall to continue our discussions about the project.

Thursday, October 9th, 1986 - Winnipeg/Vancouver

Participants: Colin Holland, Executive Vice President
& CEO, Microtel
Robert Davison, General Manager, Satcom and
Network Management Systems, Microtel
Cliff Durston, Project Manager U.S. Sprint,
MTX
Bob Thomas, Associate Project Manager
U.S. Sprint, MTX

8:00 a.m. - 10:30 a.m. - Winnipeg

I met with Dennis Hall for breakfast at which time we discussed the project further. We then went to MTX and C&L to obtain copies of relevant documents following which Mr. Hall and I went to the airport to board a flight to Vancouver.

1:30 p.m. - 4:00 p.m. - Vancouver

Mr. Hall and I visited the Microtel head office where we met with Messrs. Holland and Davison. We discussed their view of the project in terms of Microtel's strategy, costs, risks, staffing and management.

6:00 p.m. - 9:00 p.m.

Mr. Hall and I had dinner with Messrs. Durston and Thomas of MTX who had been negotiating all day with MPR's U.S. Sprint project officials. The revised requirement specifications for U.S. Sprint and related cost and delivery adjustments were the subject of their negotiations. MPR proposed a substantial change in costs that shocked MTX.

Friday, October 10th, 1986 - Vancouver

Participants: Vince Holloway, Director, Network Management, Product Development, MPR
Murray Stevenson, Director of Marketing, Microtel
Bob Girard, Project Manager, Microtel
Stephen Chapman, Product Manager, Network Management Systems, Microtel
John Chan, Project Manager, MPR
Mike Bramwell, Vice President, Marketing, MTX

8:30 a.m. - 11:00 a.m.

Mr. Hall and I met with the above listed Microtel/MPR staff as a group and then separately met with Mike Bramwell. During the meeting with staff from Microtel/MPR we discussed their staffing of the project, staff and management capability, product and project strategies and risk factors. The staff was unwilling to give us detailed information because they viewed it as confidential to their negotiations with MTX. This point is discussed further in the main body of this report. Schedules were discussed generally as was technical performance in terms of reliability, deliverability capacity and documentation.

During the subsequent meeting with Mike Bramwell, we reviewed his vision of the project and MTX's strategy as it relates to the marketing of Network Management and Control Systems. We also had further discussions about the negotiations between MTX and Microtel with respect to the revised specifications from U.S. Telecom.

11:30 a.m. - 12:30 p.m.

Mr. Hall and I reviewed the results of our meetings following which he departed for Toronto and I returned to my hotel for a further review of documents and a start on my report.

Volume

4

MANAGEMENT AUDIT OF MTX

VOLUME IV - DETAILED REVIEW OF SADL

November 12, 1986

Submitted to: MTX MANAGEMENT AUDIT STEERING COMMITTEE

Submitted by: G.G. McKENZIE
D. ELLIOTT

The Coopers & Lybrand Consulting Group
Management Consultants

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EXECUTIVE SUMMARY

A. INTRODUCTION

The Manitoba Telephone System (MTS) became involved in the Saudi Arabia telecommunications market in the late 1970's when it began seconding employees to Bell Canada International jobs in the Kingdom of Saudi Arabia. By 1981, MTS was entering into a major joint venture proposal with Bell Canada International and Alberta Government Telephones to provide Spectrum management services to Saudi Arabia. Although this proposal was ultimately unsuccessful, it was the rationale for the incorporation of MTX as the international marketing arm of MTS. Within two weeks of MTX's incorporation on January 15, 1982, it had entered into other business arrangements in Saudi Arabia on its own.

On January 24 and 25 of 1982, MTS/MTX entered into agreements with Sheikh Abdullah Al Bassam. These were agreements of intent to enter into a joint venture business in the data communications markets of Saudi Arabia. By April 11, contractual arrangements had been drawn up and executed which laid out the conditions and requirements for MTX and the Sheikh's company, Al Bassam International (ABI), to share as equal partners in the business.

By August of 1982, MTX was sending staff to start up the company in accordance with its obligation to provide management, technical and marketing expertise to the venture. Without the final approval for the necessary business licence and commercial registration, the business was initiated and operated until June, 1983 under the auspices of the ABI business licence. Upon receipt of commercial registration on June 7, 1983, the joint venture company, Saudi Arabia Data Communications Limited (SADL), was launched. It was initially capitalized with equal contributions by the partners totalling S.R. 4.4 million ($1.5 million Cdn).

Operating losses of S.R. 1.7 million ($0.6 million Cdn) which had been incurred to the date of incorporation, were capitalized, in part, in the new company by marking up the value of fixed assets transferred into the business from ABI.

The terms of the final commercial registration for SADL had a significant impact on the structure of the joint venture corporate arrangements. Limitations in Saudi law prohibited any but wholly-owned Saudi companies from importing and reselling in the way the joint venture was marketing micro-computer products; thus, two companies were necessary to conduct the intended business. The first, the joint venture company SADL, was intended to provide the technical and management services for the business. These services were to be transferred at a fixed fee to the division of ABI which conducted both the merchandising and technical services aspects to the general market.

By the summer of 1983, staff problems had emerged. In addition, cash shortages were being experienced which indicated the company was undercapitalized at that time. In September of 1983, export financing arrangements were made to help MTX fund the receivables it was carrying as the major supplier to the business.

During 1984, financial problems continued. Major loans issued in September of 1983 for export financing had to be restructured as the business was unable to meet the six month repayment terms. Other than the original capital infusion by the shareholders, no other financing had been established.

At the end of 1984, SADL reported a break even position on operations. However, Datacom Division of ABI, that portion of the venture providing merchandising to the public, recorded losses of S.R. 4.1 million ($1.4 million Cdn).

The only form of financing for the business in 1985 continued to be the export financing loans. However, in early 1985, Datacom Division of ABI, to whom the export financing agreements had been issued, was unable to meet many of the notes as they came due. Because the loans negotiated with Canadian banks had been guaranteed by either MTS or the government of Manitoba, MTX made the payments as they came due in 1985.

At December 31, 1985, SADL recorded a small loss on operations, which increased to S.R. 2.3 million ($0.8 million Cdn) after write-offs of equipment and stock. Datacom Division of ABI, however, recorded an operating loss of S.R. 8.7 million ($2.9 million Cdn). In total, to the end of 1985, the combined operations of SADL and Datacom Division lost S.R. 17.9 million (approximately $6.5 million Cdn).

In 1986, shortly after world oil prices plummeted, the sales projections were revised downward. By June 30, 1986, the combined loss on operations was just under S.R. 4.0 million ($1.4 million Cdn).

By July 31, 1986, MTX had added $2.0 million Cdn in shareholder advances to its original $794,000 equity investment and had outstanding receivables from Datacom of $11,754,000 Cdn and from Telecom of $2,049,000 Cdn. In addition, bankdrafts totalling $1,719,735 and $159,160 to Datacom and Telecom respectively were outstanding. By October 31, all but $159,160 of these drafts had been paid by MTX.

B. ASSESSMENT OF CURRENT POSITION

There are fundamental weaknesses in the business relating back to its original inception which continue to influence the current position of the business. These are discussed in the following subsections.

1. The Strategic Orientation Is Misdirected

The individual partners' strengths were in data and telecommunications (for MTS) and market relationships (for ABI). The original intent of the shareholders' agreement was that synergies would result when the strengths of the two businesses were combined. The anticipated benefits have never materialized.

The original business plan laid out a multi-approach strategy to market development; one aspect of this was involvement in the micro-processor and related microcomputer product markets. It was not intended to be the main business. However, initial efforts concentrated on the microprocessors, with serious negative results to the data communications aspects of the business. This problem is compounded by the fact that the microcomputer business is not, as was assumed in the original business plan, an easy source of quick profits and positive cash flows. In fact, it is quite the opposite.

Neither MTS, MTX, nor ABI have strengths in merchandising micro-computing products. The joint venture business, however, holds a number of distributorships in these products and made significant investments in staff, organization and facilities toward serving these markets. This is reflected in the annual business plans which, although they are beginning to reflect an orientation away from merchandising, continue to rely on this as the central part of the business.

The partners, both directly and as directors in SADL, have not given the necessary direction to management to change the basic orientation of the business. The purely data communications aspects of the business continue to constitute only a small portion of total annual sales and revenues.

2. Organization and Management

The lack of appropriate direction by the partners has been compounded by inappropriate management skills provided to operate the business. Primary responsibility for day-to-day management rests with MTX as it is the managing partner.

Sales management in the joint venture company appears strong, given the sales increases of the last 18 months. However, these were largely in areas peripheral to the main business of data communications.

Financial management skills are weak. Management and financial information systems have been wholly inadequate to date. Financial management of the joint venture assets, such as receivables, inventory, and cash flows are improving, but still appear to be less than satisfactory. Efforts to provide financial management support from Canada have been unable to resolve these problems satisfactorily.

3. Finance

Financial control is complicated by the corporate structure. MTX is currently dealing with three separate businesses:

- SADL, the joint venture company to which MTX provides staff services only;
- Datacom Division of ABI, to which MTX supplies goods from North American manufacturers and for which SADL provides management services; and
- Telecom Division of ABI to which MTX provides goods from North American suppliers and staff for technical and managerial positions.

All the goods and services supplied by MTX are supplied on open account. To finance this account, MTX entered into export finance agreements with two banks in 1983. These arrangements allowed six month cash flow financing to each of Datacom and Telecom. However, these financing arrangements have only exacerbated the cash flow problems of the business, and confused the responsibilities of the partners. The effect was that MTS/MTX have now assumed primary responsibility for financing the joint venture in Saudi Arabia.

This type of short-term financing has been inadequate from its inception. In the very first year in which the export financing arrangements were made, 40% of the initial drafts drawn for both Telecom and Datacom could not be met and had to be restructured over a two-year period. In the second year, to March 31, 1985, Telecom and Datacom were able to meet only about half of the notes that came due for payment;

MTX met the obligations for the other half. In total, over the four years to August, 1986, MTX has met 48% of the Telecom notes and 75% of the Datacom notes which have matured. The rationale for doing so has been that the notes were guaranteed by MTS or the government of Manitoba. Neither of the loans in question are to the joint venture company, SADL.

The issue of proportional financing by MTX and ABI is clouded by the corporate structure. The books of account of SADL show equal contributions for share capital and for shareholder advances by each partner. However, the President of MTX has indicated that the intent of the agreement was that the two companies, SADL and Datacom Division of ABI, constituted the real business of the partnership. MTX has never reported the results of Datacom Division of ABI on its financial statements nor identified any real or contingent liabilities for losses of this business. It has, however, been willing to provide unsecured financing on the assumption that Datacom Division was a real part of the joint venture operations. There is no such rationale for the financing and credit terms provided to Telecom. As a result of providing credit, both through accounts receivable and through loan guarantees, MTX held receivables at October 31 for the Datacom Division of approximately $13.4 million Cdn in excess of the equity investment in SADL. It also held $2.0 million Cdn in receivables with Telecom and outstanding loan guarantees of $159,160 Cdn.

The issue of proportional financing is complicated even further. In 1984, when MTX was arranging for bank guarantees from the Bank of Nova Scotia and The Royal Bank totalling $7 million Cdn, SADL arranged independent financing through one of the Lloyd's banks in the Middle East. A line of credit with Lloyd's of S.R. 10 million was secured by personal guarantees of Sheikh Al Bassam for a total of one-half of the line. As a result, Sheikh Al Bassam was then providing some financing to the business in excess of his equity holdings, as was MTX, although the Saudi partners' commitment was not in proportion to their 50% shareholder status. In 1985, for a number of reasons, LLoyd's rescinded the line of credit and called the outstanding notes. MTX allowed these notes to be paid down out of the operating cash flows of SADL/DATACOM even though it meant that the notes guaranteed through MTX could not be met. By October, 1986, the Lloyd's note was reduced to $200,000 Cdn outstanding.

From the perspective of the banks, the financing arrangements are traditional export financing. However, MTS and MTX financial managers should have recognized that these forms of financing were not used to finance individual shipments, but rather to finance cash flows in general, working capital requirements, fixed assets and accumulated losses of the two divisions of Al Bassam International. This situation can be traced from March, 1984, when the first export financing loans were extended as they matured. It should be recognized that MTX has had full access to the records of SADL and the operating records for Datacom Division of Al Bassam International. Senior financial officers of MTX should have recognized the implications of these transactions, and taken appropriate decisions to meet the financing requirements of the business.

Of equally serious concern is the involvement in forward money markets by MTS on behalf of the joint venture. In June, 1986, positions for three and six months were taken to sell Saudi Riyals valued at, respectively, $5 million U.S. and $7 million U.S. in forward money markets. There are two major concerns arising from this action:

- a portion of the position was taken by MTS on behalf of Sheikh Al Bassam; and
- we are unable to identify any projected cash flows which would justify any substantial portion of the position.

At the time of writing, it had not been established whether or not MTS has the authority to undertake transactions on behalf of a foreign business partner. As well, if this transaction was, in fact, made without real expectations of Saudi Riyal cash inflows, it would represent speculation on a possible devaluation in Saudi Riyals. The cost of this action might exceed $150,000 Cdn in due course.

C. RESPONSIBILITY FOR RESULTS

Performance has not been totally unsuccessful. Over a four-year period, the business has generated sales in excess of S.R. 50.0 million (16.6 millions Cdn) in Saudi Arabia. A number of top quality product line distributorships are held, including those held by MTX for the purpose of supplying the business. A number of major contracts have been serviced and the business holds a strong position in several of the micro-processor and data communications product markets in Saudi Arabia.

These accomplishments, however, are not significant enough to offset the financial losses incurred and the financial risk to which MTX is now exposed.

Responsibility for performance must be shared by both partners. Several key failures have occurred, as follows:

- The fundamental assumption that the business would be able to rely upon marketing advantages through the Telecom Division of ABI and through Sheikh Al Bassam appears to have been unfounded.

- The assumption that a third party would be attracted to provide the much needed additional capital financing has never materialized. Responsibility for this lies primarily with the Saudi partner, Sheikh Al Bassam.

- As evidenced by the financial results, MTX did not provide the necessary management expertise to run the business profitably.

- The directors of SADL, from both MTX and ABI, did not provide appropriate direction nor hold management accountable for performance.

- Both partners have failed to provide the appropriate financing for the venture.

- Both partners failed to recognize early signals of serious problems in the business.

The detailed information to support these conclusions is available in the body of this report.

D. RECOMMENDED COURSE OF ACTION

MTX has encountered a number of difficulties in Saudi Arabia and now finds itself with a major commitment there. It is necessary to determine the opportunities for the business in Saudi Arabia and its viability for the future. Steps are currently under way to gather relevant information which will support this determination, but this information is not yet available.

Following from the difficulties in financing noted above, and in our main report, and the relative financial positions of the two partners in the business venture, it is appropriate for the government of Manitoba to consult, as the owner of MTX, with its Saudi partner, Sheikh Al Bassam, to determine his expectations and commitments to the venture. Concern regarding the government's responsibilities to its customers and its obligations to third parties and employees must also be considered.

Subject to the results of the discussions with Sheikh Al Bassam, it appears that the ultimate interests of the Province of Manitoba would be best served by withdrawing from its Saudi Arabia operations. There are a number of reasons for this:

- Substantial losses have been incurred to date and notwithstanding market assessments that are forthcoming, short-term prospects for profitable operations are not optimistic.

- The economic difficulties faced by Saudi Arabia at this time decrease the likelihood of significantly recovering investments made to date.

- There appears to be an inability to provide appropriate management direction and control to a business as remote as this, and in a country as culturally different from Canada as Saudi Arabia.

- As a Crown Corporation, MTS/MTX has to meet broader policy and strategic objectives that appear to be incompatible with this venture.

Despite the fact that there may be some potential for the future financial viability of the business, we believe that it may be incompatible with the role of a Crown Corporation of the Province of Manitoba. Depending on the outcome of the discussions with Sheikh Al Bassam and the information currently being gathered, it could be necessary to implement the appropriate arrangements for MTX to withdraw from its operations in Saudi Arabia. These arrangements must ensure that MTX is able to meet its obligations consistent with the policies of the Province of Manitoba.

Therefore, at this time, it appears that MTS/MTX should develop a tentative program to achieve the eventual withdrawal of MTX from Saudi Arabia. This program would require careful consideration of the contractual, legal, financial and other obligations of MTS/MTX.

A meeting with Sheikh Al Bassam should be held shortly. The purpose of such a meeting would be to establish:

- the expectations of both partners regarding the future prospects of the business;

- the options and relative positions regarding the partnership arrangements; and

- to advise Sheikh Al Bassam of the government's longer-term position with respect to its investment in SADL.

In summary, in our opinion, it is in the long-term interests of the Province of Manitoba to make arrangements for the eventual withdrawal from the investment in SADL by MTX.

I. INTRODUCTION

A. SCOPE

The Coopers & Lybrand Consulting Group was appointed on August 19, 1986, to review and assess the operations of MTX, a wholly-owned subsidiary of the Manitoba Telephone System (MTS). A number of terms of reference were provided in connection with this review. The objective of this report is to respond to the specific terms of reference which related to the Saudi Arabian operations in which MTX had become involved over the past four years. The primary requirement was to review and assess the operations of Saudi Arabian Datacom Limited (SADL) to determine its viability, including a review of:

- All relevant operations of MTX in Saudi Arabia;
- All relevant business relations between SADL and Al Bassam International;
- The financial viability of the business in the Saudi market place; and
- Recommendations to either strengthen, if viable, or develop a strategy for disengagement in order to minimize financial losses if not viable.

Additional terms of reference relate to reviewing and assessing the performance of MTX management staff in managing their investment in Saudi Arabia, assessing the adequacy of operations and accuracy of information provided to managers and executives, and reporting on any information identified which may indicate that inaccurate, incomplete or misleading information was provided, or information withheld, from the MTX or MTS Boards or the Government.

The work required to prepare this analysis was conducted in a number of ways:

- Interviews with employees, managers and directors of MTX and MTS;
- Interviews with management of SADL;
- Interviews and discussions with others experienced and knowledgeable in Saudi Arabian business conditions; and
- A review of financial statements, internal financial and operational reports, minutes of Board meetings and special studies, and reports relevant to the Saudi Arabian operations.

In addition, an independent market research bureau has been commissioned to conduct a desk study of the market potential for the businesses in which SADL is currently operating.

The following is an overview of the structure of the subsequent sections of this report:

- A review of the background information to allow the reader to understand generally the history, the key players and the inter-relationships involved;
- An analysis of strategies, focusing on a detailed review of the strategies employed in entering the joint venture and ending with an assessment of the current strategies;

- A marketing analysis of the SADL products and services;
- A brief review of the current organizational arrangements and relevant human resource management issues;
- A brief discussion of the key legal issues which relate to the current situation;
- A financial analysis, which includes discussion of financial management performance and accountabilities as well as financial performance;
- An analysis of the future viability of the business; and
- Our conclusions and recommendations.

It should be noted that this is an interim report. At the time of writing, a number of key discussions are imminent or underway which may materially affect the alternatives available to the Government of Manitoba in resolving its investment in Saudi Arabia.

B. OBJECTIVES

This report has a number of objectives. These objectives result from the process by which the Manitoba Government, as the shareholders and owners of MTS and MTX, and the Manitoba public to whom the government is ultimately accountable, became concerned about the member and severity of potential problems with MTX's involvement in Saudi Arabia.

Although the terms of reference for this review include several areas of analysis, it is appropriate within the deadlines established to focus on those most critical to the immediate situation. Given the nature of the concerns raised, the top priority must be to establish the degree of risk faced by the Government of Manitoba in its operations in Saudi Arabia. This analysis must identify:

- How significant is the risk to those investments already made at the present time?
- How viable is the business as a whole?
- What is the current value of the investment in Saudi Arabia?
- What steps or strategies are appropriate to the Government of Manitoba to ensure that government resources are managed in the best interests of the people of Manitoba?

C. THE SAUDI PARTNER

Any future strategy for SADL must reflect the importance of the relationship with Sheikh Al Bassam. Since this is a joint venture, by definition, no consultant's recommendation can exclude the Saudi partner from the final analysis. This applies as well to the management of MTX and MTS, and government stakeholders, in considering how to deal with many of the problems identified herein.

Although equal partners in the business venture, we believe that Sheikh Al Bassam will have an impact on how MTX most effectively minimizes its current risk exposure.

II. HISTORICAL OVERVIEW AND BACKGROUND

The following is a brief overview of the operations in Saudi Arabia relevant to the current MTX study. This overview does not constitute an analysis, but rather provides a framework for readers who may be unfamiliar with the background of the company. An understanding of this background is considered essential to the much more detailed analysis which follows in the body of this report.

MTS has had experience in Saudi Arabia, initially providing staff for Bell Canada contracts in 1978. In 1981, MTS was actively participating in preparation of a major joint proposal with Bell to provide Spectrum management to the Kingdom.

In the beginning of the 1980's, MTS was facing a number of financial and economic pressures. Increasing competition and deregulation had resulted in a number of measures which streamlined the business through improved productivity. In addition, a number of traditional monopoly areas of business were coming under pressure from new competitors in the marketplace. The traditional telephone utility earnings cycle was becoming at risk.

Primarily as a result of these pressures, MTS, through the creation of its subsidiary MTX, was preparing to enter the

Saudi Arabian market in early 1982. Although MTX and MTS were given a number of specific mandates, the primary motivations at that time are seen to have been:

- To provide jobs for redundant employees as productivity improvement measures were implemented; and
- To realize opportunities for financial returns to supplement basic telco earnings and, similar to porfolio management, to minimize the sensitivity of MTS earnings to economic cycles.

In about 1980, Oz Pedde and Mike Aysan were introduced to Sheikh Abdullah Aziz Al Bassam through the Canadian Embassy in Jeddah during a business development trip. The Embassy at that time was acting largely as a trade mission and had been involved with Sheikh Bassam for some time. The Sheikh was an agent for Mitel.

One of Sheikh Bassam's companies, Al Bassam International (ABI), had an operating division called Telecom which provided goods and services to the Saudi Arabian telecommunications market. Tariq Al Bassam, the son of Sheikh Bassam, was a full partner in ABI. The senior officer and driving force behind Telecom was Chafe Abou Richeh.

Telecom was active in the voice communications market and was on the verge of moving into data communications. A business relationship was struck up and in 1981 MTS was providing telecommunications goods to ABI. MTS saw this as an opportunity to provide technical support and achieve many of the objectives identified earlier.

In a trip to the Saudi Kingdom in January, 1982, three senior managers of MTS agreed in a documented memorandum of understanding with the Sheikh to start a joint venture company in Saudi Arabia. The purpose for entering into these business arrangements has been identified as providing the Sheikh with a stronger committment than would be possible as just a supplier of goods and services. The initial agreement provided for the two parties to start a company within two months. The objectives of the company were identified as to be directed towards promoting the sales of data and data communication goods and services, including engineering, furnishing and installation (EFI) capability. This memorandum of agreement was supplemented with a rough outline of a business plan. The business plan, while being fairly high level in a number of areas, clearly identified the intent of the venture.

In the March 9, 1982, MTX Board meeting, O. Pedde, M. Provencher, and J. McGuire were delegated authority to represent MTX in negotiations with ABI. All agreements were to be subject to MTX Board approval before becoming effective.

In April of 1982, a number of detailed contracts specifing the responsibilities and obligations of each party had been prepared and were finalized. Subsequent MTX Board minutes record a review and approval of the articles of incorporation.

These contracts, dated April 11, 1982, specified certain essential operating conditions of the venture, to be called Datacom:

- The president was to be Richeh while the general manager was to be Mike Aysan (this latter at the specific request of the Saudi partner and the mutual agreement of both the Saudi and Canadian partners);

- The chairman of the venture would be Sheikh Bassam and the vice-chairman would be S.G. Anderson;
- The partners would share equally in all profits; and
- MTX would provide all necessary management skills.

The expectation was that while MTX would provide technical and management expertise, ABI would provide critical marketing and administrative support. This was expected to be materialized in three primary forms:

- Sheikh Bassam would provide introductions to high level business connections in the Kingdom;
- Telecom would provide access to its list of 400 key businesses with which it had established marketing relations; and
- A staff group connected to ABI called the Government Affairs Group would provide support in dealing with the complex and sometimes difficult Saudi immigration restrictions governing working visas, business licences, temporary exit and entrance visas, and other such items.

Application for commercial registration, and a business licence necessary to operate within the Kingdom, was submitted in May, with the expectation that by October at the latest it would be approved. In anticipation of commercial registration approval, mobilization of the staff and resources necessary to operate the company began in August and September of 1982. By September, several Canadian staff were in place, family and furniture to follow in many cases, and initial efforts were made towards marketing goods and services to the data communications market in Saudi Arabia.

Sheikh Bassam had been involved in joint ventures before but a number of delays and difficulties were nonetheless encountered in obtaining the commercial registration. During the initial months, operations were carried on under the auspices of a previously unformed division of ABI, called the Datacom Division. This arrangement does not appear to have violated Saudi law regarding business licences since it appears to fit within ABI's very broad business licence. Final commercial registration approval for the joint venture company was not received until June 7, 1983.

Operations to this time had generally been unsuccessful. Sales were well below expectation at less than S.R. 1,000,000 ($350,000 Cdn) and losses on these operations were S.R. 1.7 million. The initial strategy for penetrating the data communications market called for merchandising microcomputer products and accessories as a short-term entry strategy in support of longer-term development of an electronic mail network in the Kingdom. The first year of operations saw numerous problems in each of these markets. Technical transmission problems in the Saudi telephone market limited the ability to establish and operate the electronic mail system, called Al Mursil. During the first nine months of operations, management shifted more and more to a focus on microcomputers. This focus does not appear to have been related to gaining access to major accounts and wholesale markets as had been intended as much as it did to retailing to the general public out of traditional retail type operations.

In September, 1983, the Saudi auditors were reviewing operations up to the date of incorporation for the purpose of establishing the financial position for the interim statements. MTX was advised that the intended corporate arrangements of a limited liability corporation with two equal shareholders would not be able to provide the management, technical, marketing and merchandising services intended under the SADL registration. Although the division of Al Bassam which had been operating for the prior year would be able to fulfill the merchandising role, the opportunity for equity-based sharing of both profits and risks was not available. Ultimately, the newly registered joint venture company was used in a somewhat modified form from that intended. The original intention that a single company, the joint venture company, be the only business in the Saudi markets was not possible. In practice, it was the Datacom Division of Al Bassam International which was the only face presented to the public. Under the terms of a management agreement, dated June 7, 1984, between SADL and Al Bassam International, SADL provides management, technical and marketing services to Datacom Division at a fixed monthly fee.

By September, 1983, a number of things had happened:

- The general manager had expressed concerns about wanting to return to Canada, but was convinced by the President of MTS to stay on for a somewhat longer term.

- Staffing problems had manifested themselves in the first year with the return of three employees to Canada during the summer of 1983.

- The company, which never did have adequate cash funding, had experienced serious cash flow problems and lending arrangements with a Canadian bank had been made to finance the receivables that were being carried by MTX as the major supplier.

- The original operating officer of MTX, who had played a major role in providing financial management from Canada, was made a director of MTX and a new operating officer was brought in.

- Numerous difficulties were encountered with the Arabization of many of the products sold in the market, and resistance to products was occurring.

- Business plans had been revised downward, although they still projected profitable operations.

By 1984 the company was becoming firmly established in the three major cities in the Kingdom.

The two business entities were being managed on the surface as if they were one company. The first fiscal year for the business was from June 7, 1983 to December 31, 1984. By December 1984, the two companies had jointly lost about S.R. 6.0 million, recorded as a S.R. 6.3 million loss for Datacom Division of ABI and a S.R. 300,000 profit for SADL. Business plans had been prepared and revised, with each revision being considered, quite naturally, attainable. None were attained. Management had recognized that although Canadian technical skills may not be particularly cost effective in some areas, strong marketing skills were critical to success. By the end of 1984 the company was beginning to take on a very strong marketing orientation, but continued to have difficulties in recruiting people and in getting them into the country. The need for marketing skills was enhanced by the inability to attain the desired synergies with Telecom.

In March of 1984, lines of credit at two Canadian banks were near the maximum at $5.5 million Cdn and accounts receivable for MTX on its sales to Saudi Arabia were still high at $2.77 million Cdn. Several loans coming due could not be met and were "rolled-over", or restructured.

In 1985 the projection for sales of S.R. 34 million was nearly achieved. However, the business was still not profitable and recorded a loss (combined) of nearly S.R. 11 million. Within the corporate structures operated as Datacom this loss was split 8.7 million to Datacom Division and 2.3 million to SADL.

During this period of rapid growth, cash flow shortages impacted the business severely and Datacom was unable to meet its financial obligations. Some loans coming due for payment on purchases from six months earlier could not be repaid and in early 1985 were paid-down by MTX. In addition, the loan by the Mid-east bank had been called and Datacom was under pressure to repay it out of its own cash flows.

The microcomputers market was becoming more and more competitive even though Datacom represented top quality products. Margins were simply not sufficient to cover operating costs. Al Mursil continued to encounter numerous difficulties and was not developing a customer base. Sale of data communication goods and services for computer networking was growing with good margins, but would not cover operating costs.

In 1986, the business plan had a fall-back strategy which called for consolidation in the event certain sales levels were not reached. In early 1986, it became apparent that sales targets could not be reached. Despite numerous efforts to cut back on operating costs, including getting out of expensive leases, they had generally not achieved the reductions necessary to break even on operations.

Numerous difficulties in achieving a turnaround in what had always been an unsuccessful business were related to more than just operating within the recessionary Saudi economy. Management and financial reporting continued to be totally inadequate, as it had been, with little exception, since shortly after incorporation. Staff morale continued to be low and was exacerbated by severe cash shortages. Although the partners had, over the past two years, injected additional equity to the venture, it was partly in the form of conversion of assets of the shareholders to equity in the joint venture company, and did not adequately address the total capital requirements of the two companies combined.

By June 30, 1986, MTX's total capital investment in SADL of $2,794,052 Cnd had been reduced by operating losses to $2,200,208 Cdn. In addition, receivables from the Datacom Division of ABI were at $13,474,095 Cdn. Combined receivables and loan guarantees from Telecom were $2,207,911. In total, MTX had $17,882,214 committed to Saudi Arabia. A summary of this financial exposure is provided in Appendix I.

III. STRATEGIC ANALYSIS OF MTX INVESTMENT IN SAUDI ARABIA

A. INITIAL OBJECTIVES

The objectives of MTX are outlined in its mission statements:

- To be a high quality provider of telecommunications services outside of Manitoba in areas where MTS has assured expertise and resources.
- To be financially self-sufficient in providing an acceptable return to MTS on its resources utilized.

- To be a good corporate citizen.

- To provide a rewarding, challenging and personal growth environment which develops employee competence, proficiency and satisfaction.

While all of these are appropriate objectives for any of MTX's ventures, the primary motivation in entering into the Saudi market is believed to be twofold:

- To help avoid MTS layoffs.

- To earn very high returns in what was perceived at the time as a potentially untapped market (specifically, the electronic mail market).

It is not entirely clear what Sheikh Bassam's objectives were although there were some specific benefits to his existing businesses:

- Helped expand the scope of Telecom's operations into the data communications market;

- Provided technical expertise and management skills which were lacking; and

- Provided access to the North American product supply markets.

The strategies developed to achieve these objectives are described in the following section.

B. STRATEGIES EMPLOYED IN GETTING INTO THE SAUDI MARKETS

The initial strategies employed as MTX and ABI entered into the joint venture business arrangements have the following key features:

- A joint venture corporate structure;
- Canadian management, key technical and marketing staff;
- Product strategies which centre around the electronic mail (Al Mursil) product as the main long-term strength of the business; and
- A market penetration strategy centering on synergies with Al Bassam's existing businesses.

The rationale for each of these is as follows:

1. Joint Venture Corporate Structure.

The joint venture corporate structure was originally a requirement of the Saudi partner to ensure that MTS/MTX was, in fact, making a long-term commitment to the business. Without an equity position, and associated capital investments, MTS would be just another supplier. From MTX's perspective, there was no option. To be able to operate a business in the Saudi markets, it was necessary to have a Saudi shareholder in the company.

2. Canadian Management and Expertise.

There are indications that good quality management skills were not readily available in the Saudi economy. In taking responsibility to provide management, technical and marketing staff to the venture, MTX also appeared to circumvent the issue of control of a subsidiary in a very remote location. In addition, this strategy went a long way towards addressing the MTS objective to provide challenging environments to its employees.

3. Product Strategies with Electronic Mail as the Central Long Term Product.

The central product around which the initial marketing strategy was developed was electronic mail. MTX obtained the license to market Telemail software in Saudi Arabia. Telemail is the equivalent of what is known in Canada as Envoy 100. The intended strategy was to provide a full range of services in the general area of data communications that would ultimately lead towards the company becoming the leader in the field in Saudi Arabia. The flagship for this strategy was to be the electronic mail product called Al Mursil.

The Al Mursil market was defined as major accounts, banks, multi-branch corporations, etc. From a toehold in the electronic mail industry in Saudi Arabia, it was expected that Al Mursil would quickly and quite naturally spread to the gulf states. In providing supporting data communication products, the strategy was to maintain a prestige image through top-of-the-line product offerings.

4. Synergies with Al Bassam.

A key feature of the initial market penetration strategy was the expected synergies with Telecom and the advantages of having a Saudi Sheikh to open doors which would otherwise not be open to the marketing staff. Telecom had a list of 400 of the top companies in Saudi Arabia which, it was expected, would be opened up to the joint venture. Sheikh Bassam's family was also believed to have high level connections through which the new company could gain introductions to senior managers of major accounts. Through these initial marketing advantages, the line of top quality data communications products were expected to achieve rapid market penetration.

5. Other Strategic Elements.

Other features of the initial business plan which were intended to support a market penetration strategy include the following:

- The use of microcomputer and accessory product offerings would provide turnkey data communications systems.

- Retailing of microcomputers and related products was expected to be a certain method of generating short term cash flows and profits while developing the major account markets and the Al Mursil network.

- MTX credibility with suppliers would provide access to North American supply lines which might not otherwise be available until the venture was more established.

In terms of operating costs, there appear to have been two major strategies, both of which have more of a medium to longer term emphasis. The first was to, wherever possible, share facilities with Telecom. The second was to minimize medium and long term costs in the inflationary Saudi economy by entering into fixed leases or building their own facilities.

C. ASSESSMENT OF THE INITIAL STRATEGIC PLAN

The initial business plan that was prepared in January of 1982 was sound in its basic concept. It covered, at a very high level, markets, products, finance, supply, and organization. There were, however, several major weaknesses. The major weakness appears to have been a lack of an adequate market analysis to support the plan. The results of this weakness are evident in first period (9 month) results:

- Sales projections for the first year for a startup company, even with the marketing advantages expected, were highly optimistic at $6,180,000 US - actual results for the first 9 months were less than $300,000 US;

- Given the expected product mix, margins of 55% in the first year were also highly optimistic as evidenced in actual margins of 35%; and

- Operating costs were significantly underestimated.

All of the preceding served to give the venture a much higher breakeven than had been anticipated. Expectations were therefore unrealistic at the outset of the venture and the opportunity to achieve the longer term goals and objectives was extremely limited.

Although the business plan described a proposed organization, it lacked identification and definition of staffing requirements. Staffing later became a key issue.

MTX does most of the purchasing from most North American suppliers for SADL/Datacom and has participated in European supplier purchasing as well. The product mix of the Saudi business is not generally consistent with that of Manitoba manufacturers. As a result one of the most significant exports of Manitoba goods & services is the services of MTS/MTX staff. Efforts were made in 1982 to export such Manitoba products as office furniture but were unsuccessful and were dropped. MTX also supplies Telecom, of which merchandise Manitoba producers have a more significant proportion.

A strength of the initial strategic plan realized in implementation was the effective development of a top quality product line offering. All products are of top quality with, generally speaking, international reputation and marketability.

There are, however, significant shortcomings to the effectiveness with which the initial business strategies were implemented.

1. An Implementation Orientation was Lacking.

The business plan as a whole lacked an implementation strategy in itself. It assumed virtual, immediate operations and critically, perhaps fatally, underestimated the requirements of starting a new business from scratch. This was a major undertaking and would have severely taxed management and financial resources under the best of conditions. Within the context of the relatively harsh Saudi physical, economic and political environment, the North American pace could not realistically be expected to occur. The fundamental assumption that business would start immediately was totally unrealistic and severely undermined the project from the outset.

2. Staffing was Not Adequately Addressed.

In the initial business plan, the staffing strategies were left unfinished. Actual implementation of strategies reflects the orientation of some of the key players. Early strategies alternately focused on technical staff or marketing staff and underestimated the need for financial management skills. While there is a role for Canadian data and telecommunications technicians in Saudi Arabia, it was not recognized that Canadian field technicians would be competing with well-qualified Second and Third World technicians. In general, Canadian technicians are considered cost-ineffective for many skilled and most semi-skilled positions in Saudi Arabia.

The recruitment and selection process at MTS was weak. Inappropriate briefing and indoctrination processes resulted in the setting of unrealistic expectations for employees. It failed to prepare them for the realities of living in the Saudi community. It resulted in a high degree of employee dissatisfaction and ongoing low morale. The effects of the staffing strategies have never been overcome.

3. The Environment for Al Mursil Was Not Investigated Adequately.

A critical shortcoming was misjudging the operating environment for the Al Mursil electronic mail product. Numerous technical difficulties were encountered in attempting to operate this system in the Saudi telephone network. There was difficulty in getting service and support from Saudi Tel in setting up, operating, maintaining and servicing Al Mursil. In addition, while Al Mursil was looked upon by MTX management as the product of the future, it ignored the alternative products of telex and facsimile transfer which were well entrenched in the market.

4. Product Focus Was Not maintained.

In the very first year of operation, as difficulties reflected in the preceding sections were encountered, management of the joint venture moved away from the intended product focus. A strong emphasis on microcomputers and accessories developed with a largely retail focus, both direct retail sales and, ultimately, through a dealer network. As margins became tighter, it moved to more and more of a volume business. Management became preoccupied with developing the microcomputer market and failed to balance these with the data communications products and services originally intended. Since retailing computer products was easier than selling maintenance and service contracts, the emphasis naturally remained with the microcomputer lines.

5. Marketing Needs Were Not Accurately Assessed.

The markets for microcomputers and accessories were significantly overestimated. It is not clear to what extent this overestimation relates to the need for Arabization of software in the Saudi environment. Notwithstanding, management developed an organization of staff and facilities which could not be supported by the microcomputer sales they were able to generate.

It appears that efforts to establish synergies with Telecom were totally ineffective. The expected benefits of Telecom's customer lists were overestimated based upon a lack of understanding of the products and services Telecom sold. Although Telecom may have had a list of the top 400 Saudi companies in the sales records, the nature of Telecom sales did not establish strong marketing connections with these accounts. In addition, it would appear that conflicts between management of the joint venture and Telecom severely limited the ability of the two businesses to cooperate effectively in the critical early years of the business.

The first two years of operations lacked the necessary marketing program and supporting skills to succeed in the Saudi environment. Sheikh Bassam's connections were expected initially to minimize the risk inherent in having a primarily technical orientation to the business. However, Sheikh Bassam's potential was seriously overestimated and does not appear to have manifested itself to the advantage of the business. These shortcomings should have been recognized in the first half year of operation and could have been offset to some degree by a more thorough marketing program.

6. Information Systems Were Inadequate.

Information systems that report performance in a timely and accurate manner are critical to effecting control over operations. Although the initial basic microcomputer system set up for the first year of operation may have provided many key management indicators, this system was inappropriate to the corporate structure established in September of 1983 and was lost shortly thereafter. The subsequent systems have never fully addressed management's need for information, never provided the means to monitor and control performance, and have not had the confidence of the managers or shareholders of the business.

7. Systems To Maintain Accountability Were Not Developed.

Generally, the implementation strategy did not recognize the need for effective systems to maintain accountability to shareholders. Acceptable standards of performance and performance measurement criteria for management were never clearly established. Not only are job descriptions lacking, but expectations and understanding of responsibilities have not been effectively communicated. Managerial accountability to shareholders is further complicated by dual allegiances of the two senior management positions to shareholders wherein the President is appointed by the Saudi partner and the General Manager by the Canadian partner for the express purpose of allowing each to have a representative in place in the business.

Standards against which to measure performance were also missing. While there were no operating budgets in the early years, subsequent years in which monthly operating budgets were prepared have not been used for monthly reporting. Although an annual month-by-month budget is now available, monthly performance is not reported against budget. Accordingly, cost control and profitability have been difficult to evaluate.

8. Difficulties of Operating in Saudi Arabia Were Underestimated.

The results of the venture evidence a poor initial understanding of the Saudi culture. The legal restrictions were not understood until a year into the business. The use of inappropriate briefing materials, combined with unresolved low staff morale, clearly indicate a lack of understanding of the cultural and social restrictions of living and working in Saudi Arabia. Further evidence of this lack of understanding was described in public hearings discussions regarding violations of Saudi law such as occurred when T. Aysan was employed without a work visa.

The economic volatility of the Saudi economy had already manifested itself by the time the business was incorporated. There is little indication that the initial business plan or any of the subsequent plans effectively recognized this aspect of the environment within which the business operated. In addition, there are a number of business restrictions peculiar to operating in this part of the world which were poorly understood by the Canadian partners. These restrictions include:

- Such aspects as the natural pace of life which is reflected in the pace of business;
- Ramadan, a religious period during which virtually all commerce comes to a halt;
- Restrictions on sharing the workplace with women; and
- Other religious restrictions.

In addition, the cultural shock of transplanting Canadians from Manitoba to the Middle East without adequate preparation, reflects poorly on management's appreciation of what they were getting into. Events from the very first year of operations, which have recently become public, are clear indicators of the severe impact of this culture shock. Indeed, morale among Canadian employees working in Saudi continues to be a problem today.

D. ANALYSIS OF CURRENT STRATEGIES

Current business strategies continue to reflect the weaknesses and difficulties in planning which have been experienced since the inception of the business.

1. The 1986 Business Plan Reflects Improvements But Still Has Significant Weaknesses.

A number of improvements are apparent in this plan over those of previous years:

- The marketing projections are based upon reasonably realistic and thorough assessments of customer markets;
- Emphasis is increasing towards the networking and service aspects of the business;
- Initial steps were taken towards rationalizing compensation plans, primarily as related to marketing commissions;
- Initial efforts towards consolidation and cost cutbacks are identified; and
- A fallback plan is introduced which identifies decision points and milestones regarding the need for modifications to the operating strategies.

The organization continues to have a three-city representation. In each of these cities facilities and related costs are shared between Telecom, Datacom and SADL. Management indicated that as a result of a number of longer-term leases signed prior to the economic downturn, the costs of these facilities are still higher than they might otherwise be. Efforts were underway to cancel or cut back on leases wherever possible.

Management appears to have recognized the need for cutbacks and some staff cuts are projected during the year.

Although the preceding gains have been achieved, the 1986 business strategy has some fundamental weaknesses. The 1986 business plan continues to maintain the following focus:

- Continued commitment towards Al Mursil as the core and most strategic product;
- Maintenance of a merchandising orientation in the product mix; and
- Organizational and operational arrangements developed towards addressing the needs of merchandising rather than the service side of the business.

The 1986 business plan recognizes the need to move more into the networking business, but does so only in response to higher potential margins. This indicates that management has not recognized the inconsistency of merchandising micro computers and peripherals with the basic objectives of the partners and the strengths that each brings to the business. It continues, in fact, to refer to this merchandising as being a short-term solution which will resolve cash flow problems. The opposite is likely true.

Despite clear indications to the contrary, the plan reflects an unwillingness on behalf of management at the beginning of 1986 to recognize that Al Mursil has failed to gain the necessary customer acceptance in the marketplace.

The management and directors of SADL continue to skirt the issue of cost effectiveness of employees. A compensation committee formed for the purpose have failed to effectively address the issue. Management and the Board took the position that staff cuts should be taken instead of pay cuts, failing apparently to recognize that the fundamental problem is cost effectiveness of employees rather than absolute staffing levels.

2. Some Cutbacks Have Been Introduced

Part way through the year, when it became apparent that the revenue projections could not be met under prevailing economic conditions, the fallback strategies identified in the business plan were implemented. The intent of these contingency plans were to cut back on operating expenses as much as possible. The primary focus was to be on staff cuts. Staff reductions were expected to be accomplished primarily through the ability to cut back and share work with Telecom.

At the June, 1986, SADL Board meeting, the most significant step taken was the decision to discontinue the Al Mursil product. Although this decision was made in June, the SADL Board agreed to defer implementation until December, 1986. The apparent rationale behind this deferral is to allow management the opportunity to attempt to sell the Al Mursil network in its entirety.

In September, 1986, the organization staff levels were still at 38. However, a number of employees have contracts coming due, and it is proposed that they not be renewed. The organization is still burdened with a number of undesirable leasehold obligations, a cost structure which includes a fleet of over 30 vehicles and the Al Mursil electronic mail network. Financial results for June were not released until the end of September.

3. The Business Is Still at Significant Risk.

In summary, the current strategic positioning and direction of the firm are improving but have not fully recovered from the weaknesses of the initial plan and its implementation.

The planning process itself is improving, but the initial directions which drove the business towards merchandising have not been revised. It appears that the directors of SADL, who are responsible for this direction, have not recognized the faults and weaknesses of the original strategies as identified in the earlier sections of this report. As a result, the direction to management has been primarily to continue along the same path.

The marketing strategies are improving but, because they still retain a merchandising thrust, the organization is limited in how far it can restructure. Sales are declining in 1986, but it is not possible to determine whether this is due to general economic declines or erosion of market position.

Management and financial information systems have improved somewhat, but are still wholly inadequate to the task of providing effective support to managers.

Previous efforts towards increasing control over accounts receivable, collections and inventory management have made some gains but there is still a serious lack of financial management in SADL/Datacom. There does not seem to be a significant improvement in the quality of financial management of the business over prior years.

Most notably, the business fails to provide the anticipated opportunities for MTS/MTX employees. While working under these conditions is clearly a challenge, it can neither be rewarding nor provide a broadening of skills if there is no opportunity for success.

The potential to successfully turn this situation into a profitable venture, as contemplated on the current business plan given the current strategic positioning and direction, is extremely limited. The requirements for viable operations, described in Section X of this report, are based upon a fundamental strategic re-orientation of the business as a pre-requisite for viability.

IV. MARKET ANALYSIS

A. GENERAL ECONOMIC CONDITIONS

MTX entered the Saudi Arabian market just as the economic downturn was becoming serious. Oil prices had peaked in 1980 at nearly $40 U.S. per barrel, with production of 10 million barrels per day in Saudi Arabia. Prices fell during 1981 but were recovering at the end of the year as MTS and

Sheikh Bassam were discussing the possibility of a joint venture business agreement. In 1982 prices were highly unstable and, by 1983, had fallen below the $30 per barrel mark where they were to stay for over three years. From 1983 to 1986, oil prices remained in the $25 to $30 per barrel price range in the Saudi Arabian light oil spot markets. Production, meanwhile, continued to decline but at a much more rapid pace, falling from the 1980 peaks down to about 4 million barrels per day in early 1986.

Public sector spending clearly drives the pace of the economy and, as a result, the impact of this long-term recession on business in Saudi Arabia was delayed. The Saudi government prepares five-year economic plans which, until now, have been used to accurately forecast government spending. The fourth of these five year plans affects the 1985 to 1989 period. This plan identified expected expenditures on telecommunications totalling $10 billion CDN or S.R. 25 to 28 billion.

In the spring of 1986, the government announced a delay of the new annual budget. The annual budgets, which really reflect the timing of implementation of the programs identified in the five year plans, are naturally critical to the success of many major contracts and projects. To date, no new budget for the 1986/1987 fiscal year has yet been released. This leaves government ministries in a position of having to have specific treasury approval for every major project they wish to initiate or continue. While this has not produced the chaos in the economy that might have been expected, it has effectively stalled most significant business development. However, the government has also announced no changes to the fourth five-year plan.

The 1986 economic woes have been compounded by the unprecedented crash in oil prices and the failure of oil prices to recover significantly over the US $20 per barrel level. The economic crisis is felt in all sectors of the Saudi Arabian economy.

This is the economic environment within which SADL and Datacom were created and within which the viability of the business is currently being evaluated.

B. PRODUCT MIX

Operating in the market place under the name of Datacom (the division of Al Bassam International), SADL and Datacom are currently in the following businesses:

- Al Mursil electronic mail;
- Merchandising of personal computers, processors, peripherals and accessories;
- Systems communications (networking) devices, sales, installation and servicing;
- Maintenance and ongoing servicing of computer and data communications networks; and
- Subcontracting of employees for service work.

For the first half of 1986, revenues were split among these areas of business roughly as follows:

- Ten percent Al Mursil;
- Seventy percent PCs and peripherals;
- Fifteeen to twenty percent networking; and
- Maintenance and subcontract work providing five percent or less of total net revenues.

C. MARKET SHARE AND COMPETITON

Although a detailed market survey and analysis has not been feasible, the following observations can be made.

1. Al Mursil Has Been Unsuccessful In The Saudi Markets

Al Mursil has a very weak market position. By mid 1986 customers for the network totalled fifty. Excluding Datacom and Datacom dealer outlets, there were only about 10 paying customers. Primary competition is considered to be Telex and Facsimile Transfer Services. These are competition in the sense of being alternatives to electronic mail as opposed to similar competing products.

After nearly four years of attempting to introduce Al Mursil, the SADL board, at the June meeting, issued a directive to terminate Al Mursil operations effective December 31, 1986. The purpose of the deferral to December 31, is, we understand, to allow management to attempt to sell the network. Subsequent to that meeting, it was learned that some interest has been increasing in this area. Bell Canada International and Siemens Electric are believed to be conducting a market study on the data communications market in general. Such a study would clearly include the electronic mail market.

In addition, Bell Canada International has been commissioned by the Post, Telephone and Telegraph (PTT) to do a feasibility study specifically on electronic mail. Datacom has provided input to this study but the study is not scheduled for completion until November or December, 1986. On completion it is highly unlikely that the results will be made public. Al Mursil is believed to be the only electronic mail product in place and operating in Saudi Arabia at this time. As such, should PTT decide that a nation wide electronic mail network would be appropriate to its operations, the Al Mursil product would presumably be a leading candidate. It is unrealistic to expect a decision by the PTT on what position it will take with respect to electronic mail before mid 1987.

Al Mursil is considered to be the same product as Envoy 100 or iNet 2000. MTX has the "Telemail" software rights for this product in Saudi Arabia. Management of MTX has proposed that a sale of the existing Al Mursil network as a going concern, or even just of the hardware and software would be an appropriate exit strategy for Datacom to minimize losses on shutting down the network.

2. Microcomputing products lack profitability.

Datacom is an authorized dealer/distributor for IBM and Epson microcomputers in Saudi Arabia. There are currently four other authorized IBM dealers in the Kingdom, including one very large dealer. The major competition products in the microcomputer market in Saudi Arabia, as in much of the rest of the world, are IBM clones. The competition in this area is in excess of 100 retail outlets and include such names as Tandy and Computerland. In addition to IBM, Olivetti, Tandy, Victor and generic Clones, there is also a grey market for IBM products.

Generally speaking, Datacom has no real competitive advantage over other outlets for retailing products. For sales of microcomputers wholesale, however, or as terminals to larger computer system, Datacom does have the advantage of having highly skilled staff who can provide turnkey data communications systems. This advantage applies primarily where newer technology is employed.

Datacom is an authorized Epson distributor. It is estimated that with sales of Epson printers at 3,000 units per year, they have approximately 60% of the micro printer market; 80% of these sales are made through the dealer network and the remaining 20% through Datacom offices directly. Although margins were once high on these products, the market is eroding due to offshore suppliers and increased competition nationally. This is compounded by increasing difficulty in getting current product and timely shipments from Epson. Reasons for these difficulties were not adequately identified, but a recent tightening of Epson's credit policies which resulted in MTX providing payment guarantees on shipments from Epson (UK) to Datacom Division hints at cash flow problems.

Expansion boards are major P.C. accessory products for Datacom. Datacom is an authorized distributor of AST boards. It is estimated that they have fifty percent of the market but margins, like those on printers, are eroding. Datacom has no special expertise in retailing PC accessories. Their strength lies in their service ability. They do however, appear to have a strong reputation in the markets.

3. Networking is Not the Main Business.

The networking business in which Datacom is involved is defined as:

> provision of communications and interface devices, service, consulting and installation.

These devices are specifically modems, multiplexers and some line conditioning equipment as required for communication amongst computers, whether main-frame to main-frame, main-frame to remote (terminal or PC), or remote to remote (including LAN's). Sales of these can be in the form of product only or product and service, whether for installation, service or ongoing support. Margins are somewhat higher as a result of the general need for, at the very least, installation.

Datacom represents a top line of products which includes TIMEPLEX, GDC, DEVELCON, BRAID, CHORUS and T-BAR, but do not have the largest market share. Management of Datacom estimates that about 60% of the market is held by RACAL MILGO. There are a smaller number of competitors in the networking market, with about 4 competitors in each city. To sell networking equipment it is generally necessary to have representation in all three major cities since most customers operate and require installation in each city. Overall, Datacom estimates itself to be number two in this market.

Despite strong product lines and potential advantages over competitors, networking is still not the main focus of Datacom's business.

4. Maintenance and Service is a Small Portion of Business.

Maintenance and service work have generally been small revenue items for Datacom. However, there are indications that this area of business is increasing. A two year maintenance contract was recently entered into for a total fee of S.R. $1.1 million. A number of smaller contracts have also been signed and several proposals are outstanding.

5. SADL/Datacom Is Excluded From the Telecommunications Market.

As a result of the presence of Telecom, Datacom has been excluded from the voice and telecommunications markets. This has not had a serious impact on MTX since MTX provides both staff and supplies to both Datacom and Telecom. However, in being restricted from this market, the options available to Datacom are limited if it tried to expand beyond the current data communications lines of business.

Further analysis of market shares and competition may be possible on receipt of results of a market research study currently underway. The following section describes our understanding at this time of Datacom's current positioning within its existing markets.

D. ASSESSMENT OF CURRENT MARKET POSITION

Generally, Datacom appears to be well positioned in its markets. Its accounts receivable include 34 companies listed amongst the top 100 Saudi businesses. Datacom benefits from offering a full line of products and being able to provide full support to anything it sells.

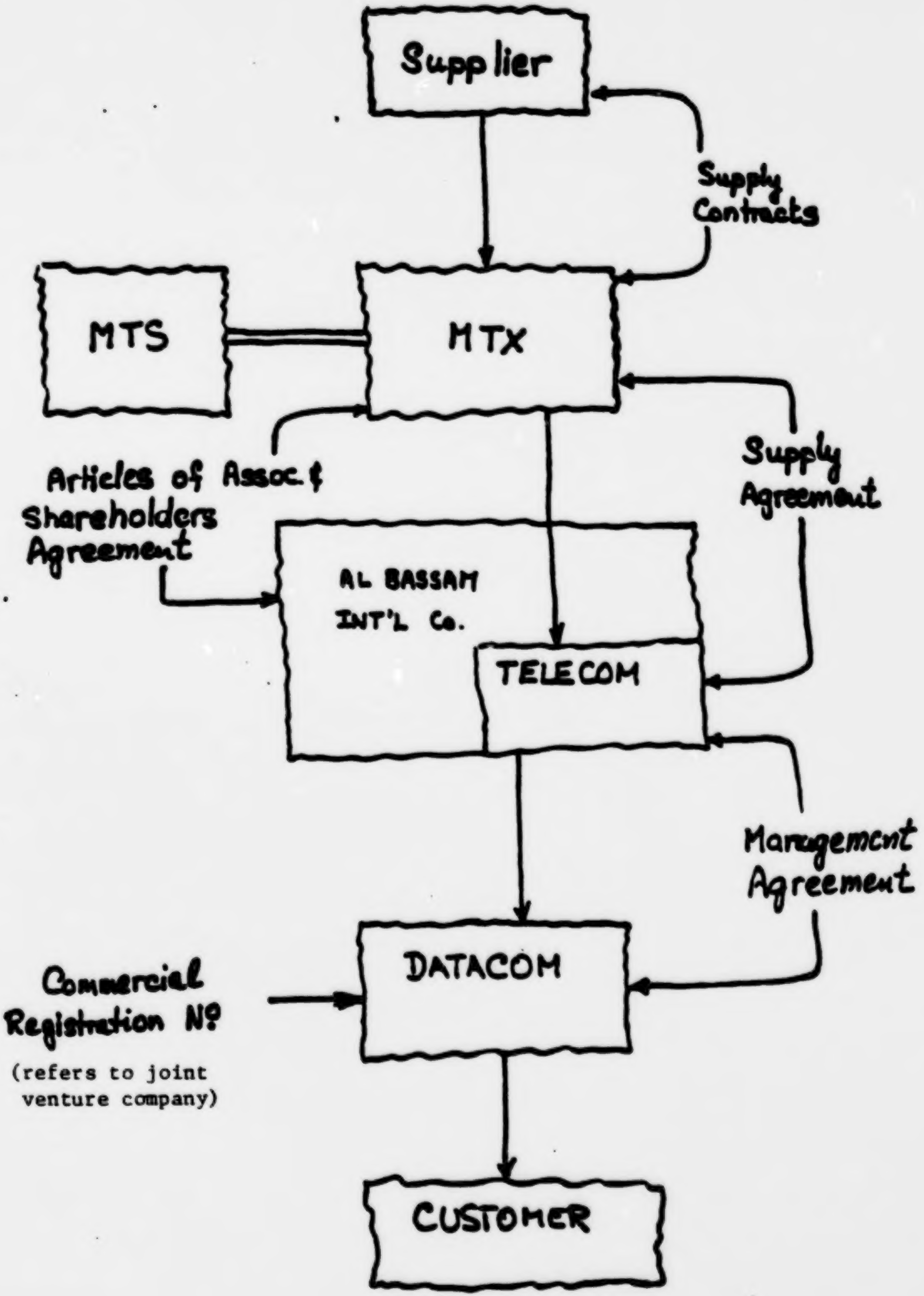
A number of publications have been reviewed to provide an understanding of the opportunities in the current markets. A professional market research company situated in the Middle East has also been contracted to perform a study of those markets specifically relevant to Datacom's operations. Upon receipt of the results of this study, a more thorough analysis will be possible.

Although a detailed survey has not been feasible, a major concern has been identified in the current market position. Having been in business for 4 years Datacom has established some credibility, but we fear this credibility may be at risk for a number of factors:

- The current problems made public in Canada are apparently becoming well known in the Saudi marketplace;

- Cash flow problems may be apparent to many of the customers, and, as demonstrated by some difficulty in

OPERATION - POST COMMERCIAL REGISTRATION


Supplier
Supply Contracts
MTS
MTX
Articles of Assoc. & Shareholders Agreement
Supply Agreement
AL BASSAM INT'L Co.
TELECOM
Management Agreement
DATACOM
Commercial Registration Nº
(refers to joint venture company)
CUSTOMER

supplying products, difficulties appear to be emerging with suppliers;

- The obvious failure of the Al Mursil product in Saudi markets; and
- The potential exists for a legal case involving SADL and Datacom in the coming months as a result of the affidavits filed in Canada.

At the present time MTX is limited in its ability to resolve these credibility issues.

V. ORGANIZATION ANALYSIS

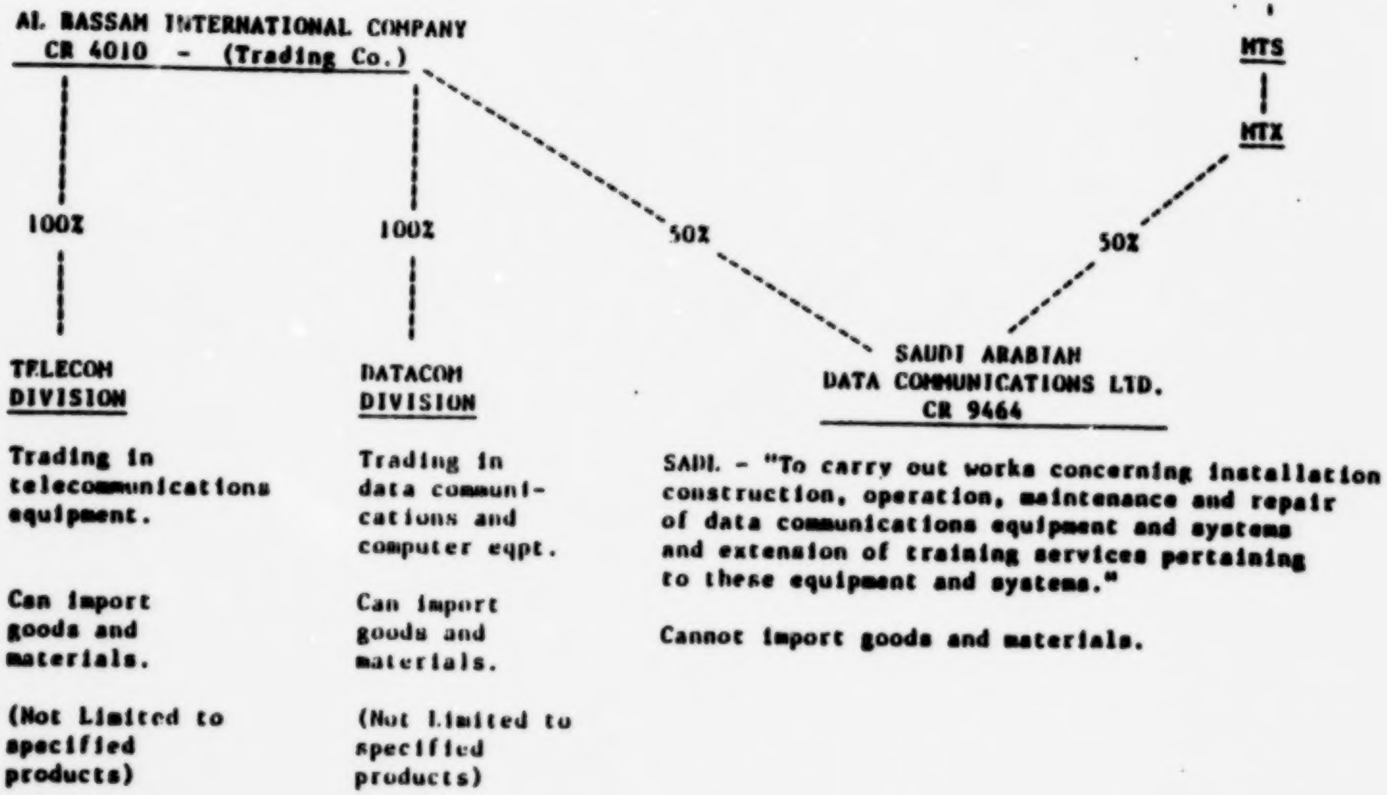
A. CORPORATE STRUCTURE

The original intent was to establish a single limited liability corporation with each of the two partners holding 50% of the outstanding shares. This intended structure, taken directly from the 1982 Business Plan is shown on the facing page. The 'Datacom' in this illustration is the intended joint venture business which was ultimately incorporated as SADL.

However, in order to import and merchandise for resale without adding value to products, as primarily applied to the microcomputing equipment, the partners were required to set up two companies. The first was the intended joint venture company called Saudi Arabian Data Communications Limited (SADL) and the second was Datacom, a Division of Al Bassam International.

ORGANIZATIONAL RELATIONSHIPS

SAUDI ARABIA



AL BASSAM INTERNATIONAL COMPANY
CR 4010 - (Trading Co.)

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MTS

MTX

TELECOM DIVISION

Trading in telecommunications equipment.

Can import goods and materials.

(Not Limited to specified products)

DATACOM DIVISION

Trading in data communications and computer eqpt.

Can import goods and materials.

(Not Limited to specified products)

SAUDI ARABIAN DATA COMMUNICATIONS LTD.
CR 9464

SADL - "To carry out works concerning installation construction, operation, maintenance and repair of data communications equipment and systems and extension of training services pertaining to these equipment and systems."

Cannot import goods and materials.

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Figure 2

In order to fully address the requirements of Saudi law, it was important that these companies, in fact, be two real entities and not just shells established to get around a legal technicality.

The difficulties involved in operating two companies where one had been intended was resolved somewhat by attempting to define responsibilities for each, as follows:

- All purchasing and reselling without value added would be processed through the Datacom Division of ABI;
- Where SADL was selling products with value added, it was intended that the product would be transferred with a small mark up from Datacom Division (even if originally sourced through MTX) to SADL; and
- SADL staff were to manage both entities, with SADL incurring all staffing costs and charging a fixed management fee to Datacom Division.

The exhibit opposite describing these arrangements is from a presentation to the MTX Board by D. Plunkett, dated December 31, 1984.

In actual practice it does not appear that SADL has provided any goods with value added to the outside markets. Even Al Mursil has been marketed through Datacom Division. Datacom Division is the active company in the Saudi markets: this is the name on letterheads, business cards, etc. This is the entity to whom MTX sells all merchandise. Where the Saudi operations hold distribution licences from suppliers on their own, it is Datacom Division which holds the licence. This is also the company which records all invoices and trade receivables and is the one face presented to customers. Separation between SADL and Datacom only appears to occur:

- in accounting records;
- in legal documents; and
- in financial reports.

The implications of these corporate arrangements are discussed further in subsequent sections of this report.

B. STAFFING AND ORGANIZATION

The business has recently restructured, reducing staff, relocating the head office from Al Khobar to Riyadh, and consolidating operations. Current staff levels for SADL and Datacom Division combined are about 38 including 5 MTX/MTS employees. This excludes some outgoing MTS and other staff intended for release during October 1986. No Saudi nationals are employees of either SADL or Datacom Division.

Chafe Abou Richeh was the first President and Mike Aysan was the first General Manager of SADL. Richeh was removed as President in late 1984 and was never replaced. Aysan was replaced in May of 1985 by Mike McInnis, who was appointed by MTX after being recruited in the Kingdom. Ed Webber, a long term MTS employee, is the national marketing manager for SADL. Webber initially worked in the Kingdom in late 1984 on a short term basis and returned for a two year term at the beginning of 1985.

Note also that MTS/MTX has been supplying staff and managers to Telecom for some time. They initially provided G. Holman, an MTS employee, as a senior manager of Telecom.

He was replaced by R. Balance who is currently the senior manager of Telecom and reports directly to Sheikh Bassam and Tariq Bassam. There are currently three MTS/MTX employees in Telecom.

Each of the three offices, in Al Khobar, Riyadh and Jeddah, have branch managers and support staff. The General Manager, McInnis, and the national marketing manager, Webber, are also the branch managers for, respectively, Riyadh and Jeddah. MTS and MTX employees fill almost all key technical and marketing positions. Base salaries for these technical positions, in particular, average more than twice those of the lesser skilled support technicians. In addition, we understand that MTS/MTX employees generally enjoy a greater benefits package than other employees in less senior positions. The current organization does not permit a direct comparison of salaries and benefits between comparable positions. However, our interviews with Bell Canada International officials, with management of SADL/DATACOM, and reviews of materials provided by MTS and MTX, generally confirm the understanding that for the most part, the compensation package necessary to attract and retain Canadian employees to Saudi jobs often makes them cost-ineffective.

This issue was first brought to the attention of the MTX Board of Directors in the December 9, 1982 Board meeting. At that time Telecom advised MTX that a bid had been lost due to uncompetitive Canadian compensation packages, which were then near $100,000 per year. Telecom advised that it would use third country nationals on future bids which could reduce the cost to $10,000 to $15,000 per man per year.

C. STAFF MORALE

As evidenced in Affidavits made public, and supported in interviews, morale from the beginning among the Canadians in Saudi Arabia has been very low. This morale problem affects both the staff and management.

Morale is still very low. Friction between MTX and non-MTX staff in the Kingdom arises when cash flow problems delay payment of salaries and benefits to non-Canadians. MTX employees are paid directly by the Canadian parent company and have no such worries. The Canadian employees themselves are under considerable stress due to the public hearings and uncertainty regarding their future as it relates to this review.

Management faces a similar morale problem. The responsibility of motivating and managing an uncertain staff, particularly the Canadian staff, while these events are unfolding, creates difficulties. Attempting to control costs while having little real influence over the salaries of the Canadians, creates additional problems. Dissatisfaction has also been expressed with the timeliness and quality of support provided by MTX/MTS.

We conclude that the ability of the staff to work together effectively towards common goals is, and probably always has been, a serious problem. While management in Saudi Arabia cannot avoid the responsibility and accountability for bringing together an effective team to manage operations, the remote location and complicated corporate structure all contribute towards these difficulties. Both shareholders are also responsible to some degree.

D. RESPONSIBILITIES AND ACCOUNTABILITIES

The initial agreements between the joint venture partners specified that Chafe Abou Richeh would be President of SADL and Mike Aysan would be General Manager. When Richeh was removed under questionable circumstances in 1984 he was not replaced. Under the agreement between Sheikh Bassam and MTX, appointment of the President is the responsibility of Sheikh Bassam.

The responsibility of senior SADL management is complicated by the dual reporting roles they have with respect to the Board and to their respective appointing partner. While the purpose of these split appointment responsibilities is to provide each partner with some degree of control within the organization, they seriously impede accountability for performance.

There is no evidence of clearly defined or clearly understood job responsibilities for any of the senior managers in these positions. In fact, discussions with Messrs. Aysan, McInnis and Webber indicated a lack of clarity on behalf of each, most particularly with respect to MTX management and the Canadian directors of SADL.

The current General Manager's allegiances are even more confused. Organizationally, in the absence of a President of SADL, Mike McInnis reports directly to the Board of SADL, of which Sheikh Bassam is the Chairman and the only partner on site. He believes he is an MTX employee. The MTX President considers him to be purely a SADL employee while the Managing Director indicated McInnnes was an MTX employee. McInnis deals regularly with MTX on matters of purchasing, finance, strategic planning and staffing. Where service provided by MTX in these areas is inadequate, he has no recourse: The accountability of the General Manager is further frustrated because MTS/MTX has two longer-term employees of their own on site on whom they frequently rely for direct reporting of the operations of SADL and the general state of the Saudi businesses and affairs.

Both partners have informal information sources about the joint venture operations. The Board of Directors of MTX use Don Plunkett as an informal source of information in the interim period between SADL Board meetings. Levon Keshishian is a long-term Al Bassam employee and is in more direct contact with the two Saudi Directors than may be expected of SADL's Manager of Administration.

All of the foregoing serve to circumvent and impede the responsibility and accountability of management to the board of directors of the joint venture.

E. MANAGEMENT ASSESSMENT

There are no performance standards against which to hold employees or managers accountable. The concept of budgeting has only recently been introduced but has not been fully implemented. Annual plans are generally at a high level and often do not match organizational accountabilities. (Recent plans however, have made notable improvements in this area.) Although some key performance criteria have been identified, no systems are in place to effectively measure and report performance for these items on a timely and regular basis.

The Board of Directors of SADL, and the Canadian directors in particular, have never held management accountable for failure to achieve plans approved by the Board. Plans are frequently revised during the year. No sales plans have ever been achieved.

This lack of accountability was evidenced most clearly in the early years of the venture when the General Manager and President failed to come close to the performance levels of the original business plans and were not censured or otherwise held accountable. In fact, after over two years of financially unsuccessful operations, the first General Manager was commended by the MTX Board for his significant contribution.

F. EFFECTIVE CONTROL

MTX is the managing partner for the joint venture. However, the ability of MTX management to establish and maintain control is limited, as described in the following sections.

1. MTX appears to be in control.

Superficially, MTX appears to be in control of the venture:

- MTX has appointed the general manager while the president position remains vacant;
- All key management positions are MTX controlled;
- MTX currently holds a majority of members on the SADL board;

- MTX controls supply; and
- MTX controls financing.

Despite these advantages, however, MTX is limited in its ability to effectively manage operations. The following observations are based upon discussions held in Winnipeg with MTS and MTX Managers and with SADL Managers in meetings held in London, England.

2. Control is Hampered by Remoteness.

Effective control is seriously hampered by the remoteness of operations. Business hours overlap between SADL and MTX only a few hours a week because of time zone and work week differences. Personal intervention is limited due to travel difficulties. These difficulties include not only the physical hardships involved in attempting to quickly travel to the other side of the world to respond to critical management situations, but the political requirements of getting approvals to enter the country.

3. Lack of Information Systems Weakens Controllability Further.

Under normal circumstances this lack of proximity to operations could be offset by management and financial information systems. Even though Datacom is in the business of providing data management products, services and expertise, it lacks adequate information systems for its own operations. This lack of management and financial information systems has seriously limited the ability to exercise real control over operations.

4. Cultural Differences Limit Ability to Influence Performance.

There are cultural differences which limit the ability to effectively apply Canadian management techniques to the Saudi businesses. These differences affect:

- Relationships between the two partners in their roles as business partners and directors of the SADL Board;
- The ability of Canadian managers in MTX to establish realistic goals and expectations for operations in Saudi Arabia; and
- The ability of expatriate MTS/MTX managers to apply their management techniques in Saudi to other foreign employees.

Ongoing lack of profitability and recurring staff problems illustrate the impact of these difficulties.

5. Intended Controls Through Providing Key Staff Are Not Fully Effective.

The General Manager's loyalties were probably intended to be towards MTX, but they appear in fact to be primarily directed towards the SADL Board. While this may be appropriate, it serves only to further minimize MTX's real control over operations.

A key feature of MTX's control is in providing management staff. They are however, hampered by the difficulties with which entry visas can be obtained for staff and for their families.

6. Control of Supply and Finances Have Been Lost.

The ultimate control over the business, of course, is exercised through control over lines of supply, and over finance. However, this control exists only through the withholding, or the potential of withholding these key elements. MTX has never been willing to risk the consequences of withholding either. In fact, recent results indicate that MTX has failed to exercise effective control over either of these functions such that they are now so heavily committed that they are unable to withhold either without risking their entire investment. From a position of strength MTX has become totally vulnerable.

7. The MTX Board Has Not Provided the Direction That is Necessary to Establishing Controls.

Ultimately, it would be expected that the MTX board would control the operations of the Saudi joint venture through direction to its representatives on the SADL board and through the president of MTX. However, evidence suggests that, in many critical cases where the MTX board might have been expected to provide direction, they only ratified after the fact decisions taken by their representatives. Examples of these include approval of strategic business plans of SADL part way through the year in which they were being implemented, after the fact advice on the selection of the General Manager, and after the fact advice on certain key financial transactions.

The MTX board has been hampered by a highly optimistic attitude on behalf of those providing information on Saudi operations, performance and plans. In the early years they were given frequent reassurances that although performance did not meet plans, the problems had been properly identified and dealt with and the most current plans would be addressed. In the first 3 1/2 years of operation, no targets for sales or profitability were achieved. In 1985, some aspects of the 1985 plan were achieved, but bottom line profitability was severely short of expectations.

8. The President of MTX Does Not Exercise Control Over This, MTX's Most Significant Investment.

The role of the President of MTX does not allow him to effectively control operations. The president reports directly to the Managing Director. His responsibilities with respect to SADL operations are defined as being to influence strategic direction of the business and facilitate the resolution of problems.

As the only manager with a financial background in MTX, the President provides considerable input to the financial reporting systems of SADL. His participation in this area is, in fact, much greater than may be considered appropriate for the president of a company with a wide range of responsibilities for other projects as well.

On occasion, he has exercised control by participating actively in the finalization of SADL business plans. In general, his ability to control performance is limited to his role as a conduit of information to the managing director, the Canadian SADL directors and the MTX Board.

VI. LEGAL AND CONTRACTUAL ISSUES

As a result of complex corporate arrangements and a foreign operating environment, the impact of a number of issues are uncertain.

A. REQUIREMENTS FOR UNILATERAL TERMINATION OF THE PARTNERSHIP ARE UNCLEAR

The articles of incorporation of the joint venture company (SADL) specify a renewable five year term of agreement. At the end of five years, either partner may, at his option and with six months advance written notice, terminate the business arrangements. Business arrangements may also be terminated with unanimous consent of all shareholders. Provisions of the agreement describe the requirements for orderly liquidation and wind down of the company. Should only one partner wish to terminate the relationship, either the Bassams or MTX, the strength of these contractual obligations are uncertain.

B. RECOURSE ON PROPORTIONAL FINANCING REQUIREMENTS ARE CLOUDED

The terms of the agreement also specify that each partner is required to provide proportional financing. Initial financing of $794,000 Canadian was provided by both partners. Both partners provided working capital financing through the provision of guarantees on bank loans and bank lines of credit. However, by early 1984 these were not proportional:

- A S.R. 10 million ($3.5 million Cdn) line of credit was established with the Lloyds bank with a personal guarantee from Sheikh Bassam of S.R. 5 million;
- A $4 million Cdn line of credit through the Bank of Nova Scotia was provided with a government of Manitoba guarantee; and
- A $3 million Cdn line of credit with the Royal Bank Export Finance Co. Ltd. was provided with an MTS letter of comfort (guarantee).

Financing became more disproportionate when Lloyd's Bank called its line of credit in 1985. The ability to enforce the proportional financing clause of the agreement, specifically with respect to recourse, is a major issue.

The issue of financing the joint venture company is severely complicated by the presence of two corporate entities, one of which, Datacom Division of ABI, is a wholly-owned subsidiary of Sheikh Bassam only. All of the goods supplied and all of the financing goes to this company. Since SADL operates only to provide services to this company, SADL has little requirement for this capital.

Because of the dual corporate structure, the books of account show that the joint venture company (SADL) has equal capital contributions. The MTX bank and accounts receivable financing is only relevant to the ABI divisions. Of these, in Datacom's records, MTX provides almost all of its capital, all of which is in the form of debt financing. This is discussed in greater detail in subsequent sections.

C. ACCESS TO RECORDS IS RESTRICTED

The terms of the agreement specify that either partner shall have reasonable access to the books of account for the joint venture. However, this is again complicated by the corporate structure, because it is the Datacom Division through which many key business transactions are processed. Any attempt to evaluate the viability of the business in the Saudi market place must focus on Datacom and its operations. Sheikh Bassam has not made them available to either MTX's Canadian auditors or to this management review todate.

Although this is clearly within his rights, it lacks the good faith with which both partners have operated for the past four years. It also places MTX in the position of being unable to support the studies commissioned to fully investigate criminal allegations and to confirm the viability of the existing operations.

D. SALES FROM MTX TO ABI ARE UNSECURED

As indicated earlier, all sales from MTX are to Sheikh Bassam's business, the Datacom and Telecom Divisions of Al Bassam International. There are no contractual or security arrangements for the outstanding receivables of MTX on these transactions.

E. SEVERAL UNRECORDED LIABILITIES EXIST RELATED TO PRODUCT SALES

SADL and Datacom have a number of liabilities and obligations. Virtually all Datacom products are sold with a one-year Datacom warranty. This warranty generally exceeds that provided by the manufacturers and any costs incurred under warranty claims become the full responsibility of Datacom. In addition, volume purchase contracts have been entered into which guarantee to provide product at set prices for up to one year in the future. Included in the pricing arrangements will be one year guarantees on the product as well. Since all products are sold under the trading name of Datacom, a Division of ABI, it is likely that no product warranty obligations will accrue to SADL. Legal requirements regarding these warranties will be relevant if a wind-down scenario is to be evaluated.

F. RESPONSIBILITY FOR PROPERTY AND SERVICE LEASES HAS TO BE RESOLVED

Both Datacom and SADL are involved in a number of property leases and employment contracts which include penalties for early termination. In addition there are some maintenance and service contracts which would require service for up to two years in the future. Maintenance and service contracts are generally made through SADL. Although Al Mursil customers are on contracts, these are expected to be terminated at December 31.

Datacom is both a purchaser and supplier of goods and has contractual arrangements for each. These agreements, however, represent not so much liabilities as unrecorded assets. Changes to the nature of doing business which affect Datacom's ability to effectively represent products or to provide products to dealers would put these agreements at risk.

VII. FINANCIAL AND MANAGEMENT INFORMATION SYSTEMS

The following sections describe our major findings on financial and management information systems.

A. INFORMATION SYSTEMS

The issue of management information has been an ongoing problem for MTX. The Provincial Auditor identified shortcomings in the SADL reporting of financial information in its annual report for MTX's 1984 fiscal year. A business review conducted by Arthur Andersen in the spring of 1985 clearly identified significant weaknesses in financial and management information systems. This was subsequently emphasized again to the Board in a memorandum from the MTX auditors in October, 1985.

1. Efforts to develop systems.

A brief history on information systems is appropriate. At the inception of the company, Theresa Aysan, wife of the General Manager of SADL, was hired to develop and operate a microcomputer-based accounting system. This system was developed and was operational in the 1982/83 year. During that time, the system accurately represented the results of the corporate structure in effect.

Towards the end of 1983, additional information was be required to satisfy the dual corporate structure. In early 1984, the system was handed off to Levon Keshishian who assumed accounting responsibilities in addition to his administrative duties.

Until 1984, financial and management information reported by this system was reasonably timely. As volume increased, the PC became inadequate for the task. In the fall of 1984, conversion to a larger computer system and new software was begun. However, a number of problems materialized:

- A number of software bugs appeared (This was the same software being sold by Datacom);
- The (IBM Series I) computer was not designed for this type of business application and was not fast enough in processing;
- Significant difficulties encountered in developing a fully integrated system resulted in transactions having to be entered three and four times to update all files; and
- Neither Keshishian nor the two accountants hired, (Philippine CPA's), had any automated systems experience.

In early 1985, general ledger reports were beginning to become more current but, again, volumes increased significantly, adversely affecting performance. In mid-1985, it was established that the Series I computer was inadequate and would have to be replaced. By the fall of 1985, conversion efforts were underway to develop new systems using current microcomputer technology.

2. Current Management Information.

Currently, management information systems in SADL and Datacom are weak at best.

A key indicator management report is produced on a weekly basis which identifies, for each branch, the amount in Saudi Riyals quoted, sold, installed/ delivered, invoiced and collected. Although these reports are prepared and distributed on a weekly basis, and appear to be used as indicators of activity levels and performance, they are deficient in a number of important areas:

- They do not reconcile to financial statements;
- They do not identify the products or product groups sold; and
- They fail to indicate margins achieved on sales.

In general, it appears that management information systems have been inadequate and do not address the real needs of management for indications of performance.

B. ACCOUNTING SYSTEMS

1. Accounting Organization and Staff.

The current accounting organization consists of the Administration Manager and three support staff. The manager is Levon Keshishian. Keshishian was an Al Bassam International employee prior to joining SADL. This accounting group performs accounting services for both SADL and Datacom Division, but does not do the books for Telecom. It processes all transactions, maintains all ledgers, and keeps all records.

Keshishian appears to be reasonably well-skilled to perform bookkeeping functions. He is knowledgeable on the subject of the accounts and their balances. He also indicates an awareness of the shortcomings of the existing financial statements. A more thorough assessment of his skills cannot be made at this time.

A number of Canadians have provided input and support in the development of accounting systems in Saudi Arabia. The first of these was T. Aysan working under the direction of M. Provencher. D. Plunkett has been involved with the accounting system a number of times over the past three years. The Arthur Andersen review in the spring of 1985 which identified several information system problems, also provided some microcomputer based spreadsheet applications to help resolve difficulties with accounting systems.

2. Accounting Systems.

Accounting systems are inadequate for the task. Financial information produced from accounting systems is neither timely nor accurate. Statements are currently several months behind schedule. Both MTX management and Datacom management have little confidence in the results reported. Examples of areas of concern include margins on sales, which are critical to evaluating profitability on an ongoing basis, and accuracy of equity account balances.

There appear to be four probable causes for this:

- Complexities of accounting for multiple company transactions within one operating environment (difficulties in segregating rather than consolidating);
- Lack of appropriate planning and direction in the development of accounting and financial information systems;
- The desire of management, both on-site and in Canada, to have a comprehensive, fully-integrated accounting system such as one might expect in a North American business; and
- Failure to commit sufficient resources for a sufficient period of time to develop such systems.

As indicated earlier, efforts have been made to address these problems, but the problems persist.

C. ACCOUNTABILITY FOR INFORMATION SERVICES

Responsibility for failure to develop appropriate information systems must rest with MTX. This applies to information systems for both SADL and the Datacom Division of Al Bassam International since MTX has management responsibility for both.

MTX's major failure lies in not providing adequate staff in accordance with its management responsibilities, and not providing adequate supporting resources to the staff who ultimately took on the responsibility for accounting and financial information systems. They should have recognized their own inability in this area and brought it to the attention of the MTX Board and of the Saudi partner in such a manner as to receive the necessary commitment of resources to do the job.

This is a serious failure in accountability since adequate information systems are critical to the success of any venture. The particular situation of SADL and Datacom, operating in a country foreign to MTX, with unfamiliar cultural practices and restrictions, increases the need, indeed the criticality, of timely and reliable management information. Failure over a four-year period to develop and maintain an appropriate system is considered a key factor in the inability to manage the company profitably.

VIII. FINANCIAL MANAGEMENT

A. GENERAL

In general, financial management skills in the SADL/Datacom management team are lacking. The current team primarily has a marketing orientation, while management under the original general manager reflected a combination of marketing and technical skills. There appear to have been only two senior financial managers associated with this venture: M. Provencher and D. Plunkett.

B. PLANNING SYSTEMS

Planning systems in SADL and Datacom are not generally well developed, but appear to be improving. The initial 1982 business plan was appropriate as a high level guiding tool, although it lacked an implementation orientation and appears to have lacked the appropriate market research backing.

Business plans prepared between 1983 and 1986 generally lacked a proper assessment of the capabilities of the organization relative to the potentials of the market resulting in profit objectives which were not achieved. The 1985 business plan appears to reflect an improved marketing analysis, but suffers from an inadequate or incomplete cost analysis.

The 1986 business plans, of which there have been two so far, appear to reflect continued improvement but still are lacking in some areas. While the marketing strategies and supporting analyses in some areas appear to be improving, other areas reflect unfounded optimism. For example, the February revision to the 1986 Plan includes the marketing of Al Mursil with continued projections of growth. Generally, however, this plan reflects a greater attention to detail and more rational justification of projections than was evident in prior plans. This is appropriate in this environment in which the annual business planning process, financial planning and budgeting are effectively one and the same.

The planning process in SADL appears to suffer generally from a lack of direction given by the partners. For the most part, the MTX Board has not had before-the-fact input into the development of SADL business plans, but has reviewed them after they have been developed and approved by the SADL Board and are well underway. As a result, SADL business plans have not been directed towards those four specific mission objectives of MTX identified earlier.

Financial planning and budgeting are an integral part of the annual planning process. The financial plan also suffers from a lack of clearly defined financial direction and generally low levels of financial management skills within the SADL management team.

The planning process further suffers by the lack of appropriate feedback to those who should be making the decisions and are ultimately accountable for results - i.e., the Boards of Directors of SADL and MTX. Minutes of the MTX Board meetings reflect consistent reassurances that although the previous plan was not met, everything is on track and the appropriate steps have been taken to eliminate the problems of the past. Although the Board appears to have recognized after about two years that these reassurances were often over optimistic, they were unable to overcome the difficulties of distance and lack of information.

Until 1986, there does not seem to have been any budgeting. The 1986 budget consists of a set of spreadsheets which were apparently used to build up the annual financial plan. These budgets do not appear to be used in any way since the monthly financial statements report only monthly performance against year to date.

C. CREDIT MANAGEMENT

We understand that prior to the founding of MTX there was a credit policy in effect on all offshore MTS sales. This policy required a letter of credit or payment to be received before any goods were shipped. Had this policy been transferred to govern MTX operations with ABI, the current significant risk exposure might never have materialized.

Credit and collection policies and procedures governing sales by MTX to the Saudi companies of Al Bassam International, seem to have been totally ineffective, if, in fact, formal policies exist at all. It appears that the Board of MTX has never provided management with any instructions or limits on sales to either the Datacom or Telecom Divisions in the first four years of operation. Without guidelines, effective control could not be exercised. The results are evident in the current accounts receivable balances.

The MTX Board was not totally unaware of the need to provide such guidance. In December, 1982, the Board placed a limit on the amount of short-term funding that management could provide to the as yet unincorporated joint venture operations in Saudi Arabia, but this did not apply to receivables. This limit was subsequently replaced by the financing arrangements with the Bank of Nova Scotia and the Royal Bank. At a February, 1984 Board meeting, concern was expressed about the level of total liability exposure to Saudi Arabia, but no apparent action was taken.

During 1984 and '85, the Board reviewed the issue of accounts receivable a number of times, but seemingly only from the perspective of effective management of Saudi Arabian receivables by SADL or Datacom. In January, 1986, the total MTX exposure of nearly $12 million Cdn was addressed formally in the MTX Board meetings. At that time it was suggested to stop selling to the Saudi companies. After some discussion it was determined that this would not provide a long term solution and would, in fact, increase the short term risk substantially.

Notwithstanding this awareness of the situation, in the June, 1986 Board meeting, the MTX Board moved to also guarantee the purchases by Datacom Division of Al Bassam International from the Epson (UK) distributor when Datacom was unable to establish satisfactory purchasing arrangements on its own. This move served only to increase the already serious over-committment by MTX.

Shipments to Saudi Arabia were stopped in August, 1986, under direction of the Minister. In the September 30 Board meeting, MTX management advised the Board that a number of serious consequences were resulting from the shipments freeze. After some discussion, the Board agreed to approach the Minister for permission to ship under very limited circumstances. These circumstances are to allow shipments to both SADL and Datacom:

- When subsequent resale will be only to Saudi customers with established payment records;
- When management of Datacom commit themselves to remit the payment within 45 days or upon receipt of payment from their customer, whichever is soonest;

- Only in cases where the goods are not to be held in inventory; and
- Only if supported by a copy of the customer's purchase order or contract at the time the order is placed with MTX.

Under these restrictions, a limited volume of shipments has been made, totalling approximately $200,000 US to the time of writing.

While these credit restrictions are clearly an improvement over previous credit policies, they are also open to challenge. It does not appear that alternatives other than full 45 day credit were fully explored. As a result, credit management continues to be a concern.

D. MANAGEMENT OF SHORT TERM FINANCES

1. Sources of Financing.

MTX sells product to Datacom and Telecom Division - it does not sell to SADL. This is generally consistent with the requirements of the two company operating structure in Saudi Arabia. The companies have no short term financing in the traditional sense. Normally, short-term financing for working capital would be secured by such short-term assets as accounts receivable and inventories. SADL/Datacom has been unable to obtain financing for its current assets. As a result, the partners have had to provide their own form of financing, in addition to their initial equity investment, in the form of the lines of credit within the Lloyds Bank, Bank of Nova Scotia and Royal Bank Export Finance Co. Ltd.

For reasons which have not been established, Lloyd's Bank, in 1985, requested that MTX and Sheikh Bassam both provide joint and several guarantees, i.e., each assume up to 100% liability for the debt. When one or both of the partners refused to do this, the note was called. Rather than enforcing the guarantee by Sheikh Bassam, Lloyd's has allowed Datacom/SADL to pay the note down over an extended period.

At the present time, there remains about $200,000 outstanding, to be paid off at the end of October or beginning of November. Payments on this line have been made from operating cash flows of SADL/Datacom (uncertain which). The Canadian banks currently provide the only outstanding financing for the company. During the time that the Lloyd's loan has been paid down, no payments have been made to MTX or to Canadian banks by SADL or Datacom.

2. Traditional Export Financing.

The two Canadian bank loans are export financing arrangements. These are fairly common lending agreements in cases with international sales. In the case of sales to foreign subsidiaries, these financing arrangements are generally unnecessary since amounts due are controlled by the parent and can be resolved through intercompany accounts.

The mechanics of traditional export financing are as follows:

- A Canadian exporter enters into a sales agreement with a foreign customer, of which sales on open account (credit) is a component;
- Goods are shipped and the customer is invoiced;
- The Canadian exporter provides copies of the invoices to be paid to the bank which then issues a draft note to the foreign customer;
- On receipt and acceptance of the draft by the foreign customer, the Canadian bank releases funds in the amount of the invoices to the Canadian exporter; and
- As cash flows from sale of the goods are generated in the foreign country, the foreign customer is able to repay the draft plus interest on its due date.

Under this system, Canadian suppliers need not have their cash flows tied up. The impact of export financing on a supplier is to reduce accounts receivable while increasing cash in the bank. To the foreign buyer of these products, the liability does not change except with respect to the identity of the creditor for the goods purchased.

The use of export financing as a sales tool and for assistance with cash flows, is generally considered good financial management. From a financial management perspective, the term of export financing should be tied to a cash cycle. This cycle is made up of the average turnover time for inventory plus the length of time it takes the foreign buyer to collect on sales on account to his customers. For bankers, these considerations are, of course, irrelevant.

Export financing contracts are generally contracts between the bank and the shipper of the goods. Notwithstanding, upon receipt and acceptance of the draft by the foreign buyer, the export loan becomes the liability of the buyer. The nature of these loans, however, is such that most sellers are required to provide guarantees as security to their banks. Under normal circumstances, these loans are clearly only contingent liabilities for the seller of goods who provides or arranges for the guarantees.

3. MTX Export Financing.

The situation under study in which MTX uses export financing with two Canadian banks on its sales to Saudi Arabia, differs significantly from the preceding description of export financing. These differences suggest that this may not, in fact, be traditional export financing and may accordingly require different treatment in terms of financial management, financial reporting and disclosure:

- A major difference relates to the parties involved in these transactions;
    - Third parties not involved in the sales transactions are providing the guarantees on the sales (MTS and the Manitoba Government);

  - The companies involved do not appear to act at arm's length;

  - The original submission for cabinet approval of the $4M guarantee indicated anticipated cash flows of 90-180 days only, and specified a matching with actual collections in Saudi.

- Management does not appear to have tied the term of the loans to the cash cycle of the goods sold; and

- MTX had very early indications of the inability of Datacom and Telecom to repay these loans.

The implications of these differences are discussed further in subsequent sections. Appendix II provides a summary of the Draft note transactions.

4. Loan Authorities May be Violated.

The original authorizations by the Government and by MTS for the loan guarantees to, respectively, the Bank of Nova Scotia ($4 million Cdn) and Royal Bank Export Finance Co. Ltd. ($3 million Cdn) do not clearly match the form and nature of the loans in use. The original government Order-in-Council for a guarantee clearly identifies the fact that the loans are to ABI, but the second Order-in-Council which replaced the original implies that the loans were to MTX. In addition, the presentation upon which the original Order-in-Council appears to have been based identifies conditions which do not seem to have been met. Furthermore, the wording of the MTS letter of comfort suggests that the borrower of the loans was understood to be SADL, not Datacom Division of ABI.

MTX entered into a Special Operating Credit of $4 million Cdn with the Bank of Nova Scotia in September, 1983. A memorandum dated May 27, 1983 from M. Provencher to S.A. Miller laid out the requirements for the guarantee required by MTX on its shipments to Datacom & Telecom. A primary justification was that a major shipment of 1,000 GTD PBX's were sold on an installed basis. Therefore, ABI would not be liable for payment until after MTX installed the equipment in Saudi Arabia and it had been accepted by the ABI customer. The memo also identified the normal cash cycle on merchandise sold from Manitoba as being from 90-120 days.

Specific conditions of the request included:

- notes would vary from 90-180 days;
- term of notes would be matched to Telecom and Datacom (ABI) actual collections on resale of these goods; and
- a maximum of $1.6 million Cdn was anticipated for Datacom and $2.1 million Cdn for Telecom.

Based upon our review of the records of draft notes issued:

- There do not appear to have been any notes issued for less than 180 days;

- There is no indication that repayment terms were in any way tied to actual cash cycles and collections of funds from ABI customers - in fact the very first notes issued to Datacom on September 26, 1983 for $1.8 million were restructured as they came due to a two year repayment schedule;

- Although the total credit of $4 million Cdn was not exceeded, the projected exposure limit for Datacom of $1.6 million was exceeded within the first two months as notes totalling $2.24 million were issued to Datacom.

Order-in-Council No. 594/83 clearly identifies that the purpose of the guarantee is for export financing to Al Bassam International. When this original authorization, under the Development Corporation Act, was replaced on August 10 by Order in Council No. 854/83 the authorization was for a line of credit to MTX Services Inc. without clear recognition of the intent that the liability guaranteed was to ABI.

A line of credit with the Royal Bank Export Finance Co. Ltd. was established in January, 1985. This line of credit is secured by a letter of comfort from MTS. Excerpts from the MTS Board meeting on January 17, 1984 indicate that the Board was advised that MTX was facing a cash flow problem associated with its Saudi sales and that the more successful MTX was in selling its products, the greater the cash flow problem would be. The Board was asked to provide a letter of comfort to the Royal Bank to meet the conditions imposed in providing MTX with a $3 million Cdn, 180 day term, financing proposal. The comfort letter was reviewed at the Board meeting and Board approval was received. The comfort letter clearly identifies that this is export financing under which MTX may draw drafts for acceptance by its Saudi Arabian subsidiary, Saudi Arabia Data Communications Ltd. (SADL). (No loans on this line of credit have been issued to Telecom.)

Most of the loans drawn down through the Bank of Nova Scotia and Royal Bank arrangements are established for the maximum term of approximately six months, regardless of whether purchases were to fill an immediate contract or to purchase for inventory stock. Arrangements were made to allow for repayment of some debt over a period of up to two years which is inconsistent with the nature of traditional export financing. In each case, the decisions have been made by management of MTS/MTX with full knowledge of the business conditions of SADL/DATACOM.

In summary it appears that:

- The expectation that these loans would be tied to specific cash flows for shipments to Datacom and Telecom Divisions of ABI may have been a major factor in the original Order-in-Council authorization (#594/83). Actual use of this financing, most of which was under the direct control of managers of MTS and MTX, does not appear to have been matched with the proceeds of any sales on the shipments being financed.

- The wording of Order-in-Council #854/83, which replaced Order-in-Council #594/83, makes it unclear as to whether the loan was understood to be to MTX or to ABI.

- The implication of the MTS letter of comfort is that the loans were approved only to SADL and excluded Datacom Division of ABI. If Datacom and SADL are separate, as MTX's financial statements clearly treat them, then the MTS authorization may be violated. If, however, Datacom and SADL are in fact the same business in the eyes of MTX, as the President of MTX has specifically indicated, then the loans are properly authorized, but financial results presented by MTX for its investment in the Saudi joint venture are misstated.

5. It Appears That Export Financing May Have Served Some Broader Financial Requirements of Datacom and Telecom.

Since MTX was responsible not only for supplying goods to Datacom Division and Telecom Division of ABI, but also for providing key management support to both, the financial records of each were clearly available to MTX management. These records would include inventory levels, accounts receivable levels, cash balances in bank accounts and collections. A review of Datacom financial records would indicate, as discussed in more detail in a subsequent section of this report, no equity or debt financing other than these loans. Since Datacom and SADL were being managed as a single entity, MTX management would also be aware that:

- combined, neither company had any form of short or long-term financing;

- that initial equity financing just covered fixed assets, and
- that until late 1985, no additional financing had been provided to fund operating losses.

There is no doubt that neither company had any working capital. Datacom Division, in particular, lacked any surplus cash flows. As a result, it should have become apparent to management of MTX, and to the MTX Board upon review of financial statements, that the export financing intended to fund specific cash flows for periods of up to six months, was, in fact, financing all cash flows on all sales, and any increases in assets as well as operating losses.

6. Early Danger Signals Were Evident.

There were a number of early warning signs that indicated Datacom Division would be unable to repay many of these debts. The first loans were drawn in September, 1983, for both Datacom and Telecom. Six months later, $1.8 million Cdn of the Datacom loans could not be repaid as they came due. They were rolled over on March 26, 1984 with repayment terms that called for four equal payments at six month intervals for a total extension of two years. It is of note that, as each of these payments came due, Datacom was unable to pay them and MTX provided the necessary funds, rebilling Datacom within their accounts receivable. The MTX Board was formally advised of the repayments after the fact. It appears that decisions to roll loans over, or for MTX to repay loans, were made after informal discussion by some of the Board members.

Instructions to the Treasurer came from the V.P. Finance of MTS.

In summary, management of short-term finances, from original authorizations to financial statement disclosure appears to have been, at best, inappropriate.

E. FOREIGN CURRENCIES MANAGEMENT

MTX does not, in the normal course of business, deal in Saudi Riyals. It purchases generally in Canadian or US currencies and bills the same, with a 3% markup, to Datacom and Telecom in Saudi Arabia. Responsibility for payment is in the currency billed. As a result, MTX is not in a significant risk exposure position with respect to the stability of the Saudi Riyal in international money markets. This is not the case, however, for SADL and Datacom, since their sales contracts are in Saudi Riyals and most of their purchases are in foreign currencies.

1. MTS Hedged in Forward Money Markets on Behalf of SADL and ABI.

In early 1986, as the world market for oil became increasingly unstable, the potential for devaluation of the Saudi Riyal became significant. The Treasurer of MTS and MTX recommended that SADL hedge in forward money markets if necessary to protect any future cash flow requirements in 1986. Such a hedge position would be appropriate in cases in which MTX or SADL expected cash inflows in Saudi Riyals.

In June, 1986, the Riyal devalued by 2.7% and a further devaluation was expected. On instructions from the

V.P. Finance, MTS took a forward position in Saudi Riyals for $5 million US at three months and $7 million US in six months. The MTX Board was advised in its meeting of June 6, 1986, that $10 million of the total position was on behalf of MTX and $2 million on behalf of Sheikh Bassam.

In the August 18 MTX Board meeting, the subject was raised again and the minutes show that the Board was advised that a $12 million forward position had been taken by MTS on behalf of SADL. In discussion, it was suggested that, with continued projections of devaluation, this forward position was, in fact, prudent money management and would protect against potential losses on receivables should the Riyal devalue. Despite the large dollars involved, it was felt that the only real potential risk was the premium cost and a small spread between the sell price and market value of the Riyal. Total potential costs in the event that the Riyal did not devalue were estimated at $70,000. It was recommended to maintain this position.

2. Without Foreign Currency Cash Flows Expected, Hedging Seems To Be Speculation.

In September, when the treasurer learned that there appeared to be no potential cash flows forthcoming, she recommended that the forward position be closed to minimize premium costs. A temporary OPEC accord at about this time had also reduced the likelihood of a revaluation.

On October 7, it was decided to close the three month contracts which were due on October 9. Losses on these transactions totalled $34,490 US. These costs were to be charged to MTX for subsequent rebilling through to the Saudi Arabian subsidiary.

This situation, as described above, raises a question on currency management practices. The object of hedging in money markets is to protect cash flows. Where no cash flows are forthcoming, dealing in forward money markets would appear to be speculating in foreign currencies. During the course of this study, no Saudi Riyal cash flows of sufficient magnitude to justify this forward position were identified. Indeed, no cash flows of any significance are anticipated in any currency by any of the companies involved in this study, within the next three months. The total MTX accounts receivable, while they approach the amount of $12 million US, are neither in Saudi Riyals nor have any apparent potential of significant cash flows forthcoming.

The trade accounts receivable of the MTX subsidiary, SADL, are in Saudi Riyals but total only S.R. 162,000, or approximately $60,000 Cdn. The accounts receivable of Datacom Division of Al Bassam International are much larger, at S.R. 7 million, or approximately $2.7 million Cdn, but are only normal trade receivables. There is therefore no reason to anticipate significant cash flows from these receivables in the next three months.

It is unclear at the time of writing whether or not MTS or MTX's authority includes hedging in money markets on behalf of foreign business partners.

3. The MTX Board Has Not Moved to Correct This Situation.

Currently, the six month position for $7 million US is still outstanding. A simple extrapolation of the original loss on $5 million US over three months suggests that the total Canadian dollar risk exposure on this hedging position could approach $150,000 to $175,000 Cdn.

At this point, the key management decision is related to how to best minimize this exposure. The alternatives are to hold the position on the assumption that a further devaluation will occur, or to sell the position and eliminate potential losses of holding until due.

IX FINANCIAL ANALYSIS

The following analysis is based upon a review of the financial statements for SADL and for Datacom Division of ABI.

A. INITIAL CAPITALIZATION OF SADL

Upon receipt of its commercial registration on June 7, 1983, SADL was initially capitalized with S.R. 4,420,000, or $1.59 million Cdn at prevailing rates of exchange. This is approximately the value of the assets sold to SADL by ABI on incorporation of SADL.

ABI had been operating since September, 1982 on behalf of the intended joint venture. During this time it had accumulated assets which, at the time of incorporation of SADL, had a net depreciated cost of S.R. 6,784,768. These had been acquired under the umbrella of a separate operating division of ABI, which operated under the name of Datacom during and subsequent to this interim period. MTX and ABI had jointly supplied the fixed assets involved. MTX supplied assets, such as office furniture and fixtures, by selling them to the Datacom Division of ABI.

In transferring the assets from ABI to SADL, a number of complexities were introduced:

- As a result of the need for not one but two companies, the total assets acquired by ABI were split between ABI and SADL;

- Rather than transfer the assets at cost, a mark-up to "fair market value" (FMV) of S.R. 1,754,264, equal to the losses incurred to the date of incorporation, was applied to the cost base of the total assets;

- An advance of $1.5 million Cdn was made to ABI by SADL; and

- In tracking the cash flows, it appears that ABI may in fact never have paid MTX for some of the assets transferred on incorporation.

The implications of these complexities are discussed in the following sections.

1. Assets Were Split Between Datacom and SADL

Of the total S.R. 6,784,768, 54.1% was transferred to SADL at cost and the remaining 45.9% stayed with Datacom. At cost, total assets involved were split as follows:

	TOTAL	SADL	%	DATACOM (ABI)	%
Current	2,681,835	423,495	(15.8)	2,258,340	(84.2)
Fixed	4,102,933	3,249,438	(79.2)	853,495	(20.8)
Total	6,784,768	3,672,933		3,111,835	

Over 85% of the liquid and current assets were left with ABI; only S.R. 423,495 in inventory was allocated to SADL. SADL, on the other hand, was allocated most of the fixed assets.

2. Assets for Both SADL and Datacom Were Marked Up at Incorporation.

From a cost base of S.R. 3.7 and S.R. 3.1 million for SADL and Datacom, respectively, assets were marked up as follows:

	TOTAL	SADL	DATACOM
Cost	6,784,768	3,672,933	3,111,835
Mark-up - S.R.	1,548,082	747,067	801,015
Adjusted	8,332,850	4,420,000	3,912,850
Mark-up as a % of total assets		20.3%	25.7%
Mark-up as a % of fixed only		23.0%	93.9%

Mark-ups applied to fixed assets only, but excluded the Al Mursil messaging system which, at S.R. 2.49 million, forms a large portion of the SADL's total assets.

The total mark-up amount was based upon pre-incorporation losses incurred of S.R. 1,754,264, adjusted for depreciation. The motivation for these transactions is not entirely clear, particularly since the companies involved are clearly not acting at arms length. The affect of the transactions is, however, clear: the value paid by SADL for assets from ABI was increased S.R. 747,000, about $265,000 Cdn, the costs of which were borne equally by both partners.

Technically, this fair market value becomes SADL's cost, and financial statements for SADL report accordingly. However, inasmuch as these assets which were marked up were provided almost entirely by the partners, neither of whom are at arms length with SADL, this treatment appears inappropriate:

- It overstates the actual investments made by the partners;
- It transfers a profit to one partner which is not part of the partnership agreement;
- It may overstate the strength of the business in reporting to stakeholders in the business as compared to the more traditional and more conservative lower of cost or market valuation approach; and

- The basis for valuation of used furniture, fixtures, leasehold improvements and tools is highly subjective and open to challenge.

These transactions appear to have been explained to the MTX Board prior to being finalized. No portion of the loss of S.R. 1.7 million for the first nine months of operation appears to have been recorded in MTS or MTX financial reports.

3. A Loan of $1.5 Million Was Made to ABI

It was on the strength of this transfer of assets that the loan of $1.5 million Cdn was made to Al Bassam International. As a result of these transactions, the balance sheet of SADL evolved as follows (in Saudi Riyals):

a) On incorporation:

Assets:	
Cash	4,420,000
Equity:	
Share Capital	4,420,000

b) On transfer of assets from ABI

Assets:	
Cash	4,420,000
Assets (various)	4,420,000
	8,840,000
Liabilities:	
Due ABI	4,420,000
Share Capital	4,420,000
	8,840,000

c) On advancing $1.5 million Cdn (S.R. 4,134,893) to ABI

Assets:	
Cash	285,107
Receivable from ABI	4,134,893
Assets (various)	4,420,000
	8,840,000
Liabilities:	
Due ABI	4,420,000
Share Capital	4,420,000
	8,840,000

Note that on completion of these transactions, the loan to ABI was fully offset by the amount due ABI for the assets transferred. As a result, although the release of funds appears to have been improperly authorized and settlement was delayed while the bookkeeping was performed, in the final analysis, the loan was justified.

4. ABI Ultimately Defaulted on Some Cash Flows Related to the Original Incorporation

The computers for the Al Mursil Messaging System were originally sold from MTS/MTX to Al Bassam International prior to incorporation of SADL. To pay for these MTX, after originally purchasing these assets in North America, was to receive four equal payments of $183,019.53 US at six month intervals. These payments were to be made in drafts issued by the Bank of Nova Scotia based upon the strength of a personal guarantee from Sheikh Bassam through the Byblos Bank.

Records indicate that these drafts were issued on the four scheduled dates and, as the first three came due, were repaid by ABI. It is not clear whether or not these were repaid from cash flows generated by Datacom Division operations. (This could not be established without a detailed audit of that business.) As the fourth payment came due on September 26, 1985, the MTS/MTX Treasurer was instructed by the Vice-President Finance of MTS to make the payment on behalf of the Bassams. Indications are that the personal guarantee of Sheikh Bassam was still in effect and that MTX held no obligations for this debt. The note was met by MTX and subsequently became a receivable from Datacom Division of ABI.

Instructions to the Treasurer to pay the note included the advice that inventory would be returned to recover the funds. Inventory from Saudi Arabia (Timeplex inventory) was repatriated to Canada in April of 1986 to reduce the outstanding receivables. However, in response to questions on July 29-31, in question period and public hearings, it was indicated that MTX would have repatriated this equipment anyway since it was in excess of that actually required and had not been fully paid for by Datacom Division of ABI. It appears, therefore, that MTX has never been fully paid for the original assets with which SADL was charged by ABI on incorporation. The $183,019 US payment on which ABI defaulted has been added to the pool of outstanding receivables on the books of MTX.

B. FINANCIAL ANALYSIS OF SADL

The following financial analysis is based upon unaudited financial results and interviews with MTS, MTX and SADL managers. An analysis of Datacom Division of ABI is performed separately in the following Section.

1. Revenues and Margins

Revenues from two major sources are attributed to SADL accounts under the system of bookkeeping in effect for SADL/Datacom:

- Network, service and maintenance revenues; and
- Management fees charged by SADL to Datacom Division of ABI.

Al Mursil revenues are also attributed to SADL but these are currently immaterial in amount.

Network and related revenues earn margins of 35-40%. However, gross revenues for these are only S.R. 6.5 million in 1985 and S.R. 2.2 million for the first half of 1986. As a result, the largest contribution to operating costs comes from the management fee charged ABI of S.R. 3.0 million annually.

2. Operating Costs

SADL shares many operating costs with Datacom, and some with Telecom. Joint costs, which have not been audited, include:

- staff - management, marketing and services,
  - support (administration, drivers, etc); and
- buildings and facilities, including utilities, maintenance and related.

In addition, SADL is billed by ABI for what are called government affairs services (support in visa applications, etc), with charges of S.R. 6,000 in 1985 and S.R. 20,000 in 1986.

The operating cost structure of SADL and Datacom is hampered by annual property leases of S.R. 1.3 million for business, residential and warehouse properties. While efforts have been made to reduce the annual lease costs, some of which are significantly more than today's market value for property, leases are still a major fixed cost.

All SADL employees are non-Saudi's, or ex-patriot workers. Employee costs include:

- Base salary;
- R & R holiday entitlement;
- Car allowance or car and operating costs;
- Housing;
- Entertainment;
- School fees;
- End of service indemnity; and
- GOSI (General Office for Social Insurance) premiums.

Average annual base salary costs for MTS/MTX senior managers are over $100,000 Cdn and are $60,000 - $70,000 for MTS/MTX engineers and marketing staff. Total annual costs per employee for these, primarily Canadian, employees, are expected to average $100,000 or SR 280,000. This is in contrast to many other foreign workers employed by SADL/Datacom whose base salary is a fraction of the Canadians and whose benefits are significantly less. The example presented was that of four engineers (technical support) from a Second or Third World country whose salaries average less than $30,000 per annum and who share one apartment together.

At August, 1986, SADL/Datacom had ten employees from MTS and MTX, and Telecom had three. At the end of October, Datacom had reduced to five, about 20% of combined SADL/Datacom staff levels. The primary significance of this is not in the absolute salary costs, but in the staff costs relative to margins earned.

3. Assets

SADL's net investment at June 30, 1986 in fixed assets of S.R. 3.64 million consisted of:

(S.R. 000's)

	Net	%	Gross	Accum. Depr.
Office assets	436.0	12.0%	541.9	(105.9)
Leasehold impr's	71.9	2.0%	302.5	(230.6)
Housing assets	733.7	20.0%	1,022.0	(288.3)
Vehicles	272.3	7.5%	477.0	(204.7)
Computers, Tools	968.6	26.6%	1,370.5	(401.9)
Al Mursil	1,158.8	31.9%	1,721.1	(562.3)
	3,641.3	100.0%	5,435.0	1,793.7

Of these assets, the Al Mursil equipment will be written off, less any recoveries from salvage if sold in the kingdom or if repatriated to Canada.

An assessment of the fair value of these assets will be reflected in a valuation of the business as a going concern or for a wind-down scenario.

4. Capital Structure

The balance sheet indicates that SADL was reasonably well structured at December 31, 1984, with a current ratio of 1.02 and 38% of total assets funded by share capital. Equity was, in fact, 104% of net fixed and other assets.

At December 31, 1985, the balance sheet shows additional capital infusions of S.R. 3,840,000 ($1.4 million Cdn) by each partner for a total infusion of S.R. 7.68 million. This does not appear justified by SADL's balance sheet:

- The loss for the year was only S.R. 2.17 million, most of which were non-cash losses in the form of write-downs of equipment that had been in place since incorporation.
- Total current liabilities increased only slightly, but with the net effect of providing rather than consuming funds; and
- Sales volumes increased only slightly (16%) for SADL during 1985, not nearly enough to justify the nearly twofold increase in current assets.

As a result, it appears that the increase in equity capital was required to fund the increase in SADL's current assets. The amount due from affiliates is

S.R. 9,775,000, or about 1.25 times greater than the increase in equity capital. With a current ratio of 1.76 at the end of 1985, it is likely that the primary motivation to increase equity through shareholders' advances was to provide greater accounts receivable support to the affiliated company, Datacom Division of ABI.

Relative to Datacom Division, SADL is highly liquid, although it is Datacom which has the surplus cash balances. High intercompany receivables and a generally low payables level indicates that SADL is current in its obligations to Datacom Division for intercompany transactions.

5. Conclusions

SADL is not profitable. Basically, it has broken even on operations in the first two years to December 31, 1985 with any losses attributed to equipment disposal. Losses to June 30, 1986 of S.R. 1.17 million may herald significant operating losses for 1986, but probably only reflect the business cycle in which over 30% of the annual sales will occur in the last two months of the year. At best, however, 1986 could be another break-even year for SADL when viewed in isolation, and breaking even will be contingent upon maintaining revenues of S.R. 3.0 million from Datacom Division of ABI. Should anything happen to Datacom Division, SADL will clearly be unable to avoid significant losses on operations.

Profitability in 1986 will also, once again, be eliminated by write-downs of Al Mursil equipment which, depending upon salvage values, could range from S.R. 100,000 to 800,000. It is unlikely that a 100% write-off will be required.

C. FINANCIAL ANALYSIS OF DATACOM DIVISION OF ABI

Audited financial results for the operations of any businesses of Al Bassam International are not available. The following analysis is based upon financial results reported to MTX on the joint operations of SADL and Datacom Division of ABI by management of those operations.

1. Revenues and Margins

Revenues attributed to Datacom Division of ABI are those for the merchandising of personal computers and micro processors, terminals and peripherals, and software.

Margins on these products are in the order of 25% and are under continuing pressures to reduce. If adjusted for commissions paid, these margins become 17.3% in 1985 and 24% in 1986. In 1985 Datacom Division generated 77% of combined revenues with SADL, but only 69% of gross profit. This weak leverage in sales is continuing with first half 1986 results showing Datacom Division producing 78% of combined net revenues and only 71% of margins.

2. Operating Costs

Although most operating costs are shared with SADL, and are, therefore, subject to the same concerns noted in the preceding section, Datacom Division has a higher operating cost structure:

- It bears the full burden of all financing costs;
- It is allocated 79% of the occupancy costs;
- It has a S.R. 3.0 million annual management fee, to SADL, which amounts to 58% of the total 1985 margins; and
- In addition to being allocated the management fee it incurs over SR 2.0 Million in salaries and benefits and is charged 100% of commissions.

Commissions have declined significantly in 1986.

First half results for 1986 indicate that, although sales are well behind 1985 levels at 31% of the previous year's totals, operating costs are well controlled at 30%. When combined with slightly higher margins, the operating loss is only 32% of last year's total half way through the year and the peak sales cycle has not yet occurred.

3. Assets

Datacom Division of ABI is insolvent. Current assets are less than half that required to meet current obligations. It is also likely that the current assets are overstated due to the following:

- Receivables include very old accounts, some of which are in dispute, but reserves for doubtful accounts have never been made; and

- It is generally estimated that at least 50% of the current inventory is obsolete or otherwise non-saleable in the current Saudi markets.

Reserves of 25% of receivables and 40% of inventory (assumes a 20% recovery for half of the inventory) would reduce current assets by S.R. 5.0 - 6.0 million, reducing the current ratio to .36 and tripling the operating loss for the first half of 1986.

Datacom Division's fixed assets consist of office related assets (equipment, furniture, leaseholds) at 54% of net assets, and housing, furniture and fixtures at 39%. The marketability of these assets is uncertain, but will be reflected in a valuation of the business as a going concern or for a wind-down scenario.

4. Capital Structure

Datacom Division is not just undercapitalized, it is not capitalized at all. It is entirely financed by short-term credit. Of the S.R. 41.7 million outstanding debt at June 30, 1986, S.R. 32.9 million, or almost 80%, is directly related to MTX. If adjusted for general payables, this becomes over 85%.

The decision in 1985 to increase the capital of SADL (by each of the partners meeting draft notes coming due) by $2.0 million Cdn each in shareholder advances would be clearly justified if made based upon the Datacom Division balance sheet.

There appears to be neither debt nor equity financing provided by the registered owners of Al Bassam International. This may be consistent with the original intent of the partners' agreement i.e. Datacom Division of ABI is just an extension of the SADL joint venture and therefore requires no separate equity financing. However, with MTX providing a significantly disproportionate share of the debt financing, the spirit of the agreement would appear to have been violated.

5. Conclusions

Datacom Division of ABI is not now, nor has it ever been, a profitable business. Although indications are that costs are being more effectively controlled in 1986, depressed sales and continued low margins on sales of about 25% lead to the conclusion that 1986 will again be unprofitable.

Inasmuch as Datacom Division is insolvent, it can continue to operate only with the permission of its creditors, the largest of whom by far is MTX. The only strength in MTX's position in this respect is that, having allowed other liabilities to be repaid while theirs remain outstanding and overdue, no one else can force the business into receivership until MTX has made a decision on how to best minimize its losses.

D. COMBINED FINANCIAL RESULTS

1. Results Have Been Treated Inconsistently

The President of MTX is on record as saying that "it has always been the intention of MTX to honour the principles of the Shareholders' Agreement" which would require MTX and Al Bassam International to share equally in the joint profits or losses of the combined operations of SADL and Datacom Division. He indicated that it was expected that losses on Datacom Division costs could be attributed to MTX "by means of set off against any MTX accounts receivable", i.e. by MTX writing off receivables.

This intent is supported by a number of factors, the most notable of which is the application for additional equity capital of $2,000,000 million Cdn in 1985. This request appears to have been based upon the capital requirements of the combined operations and is borne out in the analyses of the preceding sections.

This is, however, inconsistent with reporting of financial performance by MTX. The MTX annual statements report only the results of SADL and do not, even by way of note, recognize the shared liability referred to by the MTX president. Given the express intent, financial reporting would appear to be deficient, although the 1985 annual statements of MTX do refer to the uncertainty of the recoverability of the investment in SADL and the related track receivables, on the basis that the recoverability was dependent upon the success of future operations of SADL and certain related divisions of the Saudi Shareholder.

2. MTX Has a Large Investment To Recover

MTX has a total investment (see Appendix I) in SADL/Datacom at October 31, 1986 of:

	(Cdn $000,000's)
Accounts Receivable	13.47
Equity (net of losses June, 1986)	2.20
	$15.67 million

Also, receivables and loan guarantees totalling $2.2 million Cdn are outstanding from Telecom. It has been suggested by management of MTS and MTX that this investment could be recouped over the next five years. To do so, not discounting for the cost of capital, would require earnings of over $3,000,000 per year (S.R. 8,400,000). Since SADL/Datacom has operated at a loss for each year since inception, these projections appear highly unrealistic.

We conclude, therefore, that it would be appropriate, indeed, essential, for MTX to establish a provision for write-off of some portion of this investment. Such a provision is, we believe, mandatory by accepted accounting standards. The following suggestions are offered to establish a basis for the amount to provide:

- For MTX receivables, assuming that proceeds from collections and sales of Datacom current assets will yield 75% of receivables and 60% of inventories (based on estimates by SADL/Datacom management), a recovery of $4.0 - 5.0 million Cdn for a provision of about $7 - $9 million.

- For equity, salvage value of non-leasehold assets of SADL at some discount below cost to reflect the nature of these assets. Assuming a 75% salvage, there would be a recovery of about S.R. 2.0 million, ($750,000 Cdn), for a provision of $1.5 million Cdn.

These are, at this point, only suggestions of possible treatment of these provisions. It is most important, however, that an element of conservatism be re-enforced in reporting for these operations in order to restore confidence to users of these statements. It will also help to ensure that any pending decisions which may be based, to some degree, on these financial results, are made with the full knowledge of these potential and highly likely losses.

X. VIABILITY ASSESSMENT

This section describes the necessary conditions for viability of the joint venture operations of MTX in Saudi Arabia. For the purposes of this discussion, the combined operations of SADL and Datacom Division will, as has been done by MTX in the past, be treated as one business.

A. CURRENT VIABILITY

Profitability is only one measure of a business's viability. Profitability in itself need not be present in the traditional sense for a business to be considered viable by its owners - breaking even on operations and, in some cases even continuing to operate while incurring acceptable levels of losses, can be considered acceptable if a business is addressing the full range of goals and objectives of the shareholders. Such broader goals may relate to market penetration or development strategies, business diversification efforts, staff employment objectives or other, more socially oriented, objectives.

In the case of the MTX investment in Saudi Arabia there are several goals, in addition to pure profitability, which must be achieved in order for the business to be considered a viable investment by the parent company. These goals in particular relate to providing positive and challenging employment opportunities and to ensuring good corporate citizenship. As a result, the absolute profitability of the investment from the MTS/MTX perspective must also be balanced with how well the joint venture business in Saudi Arabia addresses these other goals.

In the eventuality that MTS/MTX determine the business not to be viable from this broader perspective, it will be important that the pure financial viability be clearly established in order to fully determine the attractiveness of the business to other investors. A valuation of the business should be conducted to establish its value as a going concern and in a wind-down scenario.

The following section describes the conditions we believe necessary for the business to be financially viable. Viability will consist not just of the ability to sell the products in the markets at a profit, but the ability to bring the right product to the right market in the right form at the right time. This includes all aspects of operating the business including organization, financing, operating cost structures, purchasing and marketing functions. The ability of MTS and MTX to meet these conditions is addressed at the conclusion of this section.

B. CONDITIONS FOR VIABILITY

To be viable, the current business must overcome a number of organizational weaknesses which are identified in the preceding sections of this report. These include the following:

- A strategic orientation which emphasizes products and services not appropriate either to the market or to the strengths of management;

- A marketing thrust developed towards those inappropriate goals laid out in the basic strategies of the business;

- Organizational arrangements which reflect

    - a merchandising orientation in delivering goods and services to the markets,

    - cost ineffective staffing strategies in many areas,

    - a failure to develop an organization which includes a balance of marketing, technical and financial skills;

- Lack of timely, accurate and relevant financial and management information systems;

- Failure to provide the necessary level of financial management and expertise by the managing partner;

- Inappropriate financial strategies resulting in

  - inadequate capital structure,
  - inappropriate financing mechanisms,
  - questionable accounting practices; and

- Lack of appropriate financial controls over operations, including those over receivables and inventories of the joint venture operation as well as over supply by the parent company.

The following sections describe the conditions in each of these areas which would appear necessary to re-establish the business as a financially viable operation. These represent the standards against which the future potential of the business can be evaluated.

1. Strategic Orientation Should Reflect the Strengths of the Partners.

   The strategic orientation of the business should reflect the major strengths of the two partners. MTS/MTX, appears to have strengths in the areas of:

   - Operation and maintenance of a telephone network;

   - Project management of major tele - and data - communications network development and maintenance projects;

- Implementation of current and high technology communications mechanisms and systems; and

- Access to world scale financial markets for financing.

The strengths of Al Bassam International are not readily apparent from an operating perspective. However, ABI plays a key role in providing access to the Saudi markets in the following ways:

- Provides a sponsor for applications for working visas;

- Provides the required Saudi participation in the joint venture company necessary to apply or bid for any work in Saudi Arabia; and

- Can provide the 100% Saudi owned corporations which are necessary for some aspects of operating in Saudi Arabia.

In order to exploit these strengths, would be necessary for the basic philosophy and strategy of SADL/Datacom be revised.

Al Mursil, as the core long term product offering, has already been recognized as inappropriate to the market. In addition, management has indicated an awareness that merchandising of microcomputers, microprocessors and related terminals and peripherals do not address the above-noted strengths. Future strategies should focus on providing networking services and systems, and data communications expertise in the form of maintenance and service contracts.

In addition to these products, it may be appropriate for MTS/MTX to reconsider its approach towards telecommunications projects. Until now, telecommunications has been the realm of Telecom. Other than providing some materials and staff in seconded management or temporary project positions, MTS/MTX has not been involved in these areas of operation. However, the market research conducted to date indicates that major expenditures may be forthcoming in the next four to five years in the general area of tele and data communications. Restricting the operations of the joint venture company to strictly data communications limits its ability to participate in these larger markets. Accordingly, a viable business strategy would include a carefully developed program to participate in all forthcoming bids in both tele and data communications coming out of the PTT, or other related government bodies.

Such a program may seek to either compete directly with the other telcos in these markets such as Bell Canada, British Telecom and AT&T, or it could focus on providing highly specialized skills as subcontractors to these companies. The latter approach would probably be more appropriate as an entry strategy. Although Datacom has serviced major data communication projects in the Kingdom, we are not aware that any related directly to the core business of the telephone network which, we are suggesting, is the primary focus of these efforts.

2. Marketing Should Reflect Strategic Business Goals.

Currently, marketing strategies are becoming more oriented towards sales of networking and related services than they were in the past. Future marketing strategies, in order to be successful, would continue this trend, rapidly phasing out of the merchandising side of the business and focusing solely upon those areas of business identified in the preceeding strategic analysis section.

It is appropriate that the marketing strategy differ significantly from that currently in effect. The nature of selling for the merchandising side of the business, which has been the focus up to 1986, is, we believe, significantly different from that necessary to participate in major project bids or to sell turnkey data communication networking systems.

Through MTX, SADL/Datacom have exclusive and non-exclusive distributorship rights for a number of products throughout the Middle East. It would be appropriate for marketing strategies to exploit these rights, particularly where exclusivity is involved. To do so would require a highly focused and carefully managed program towards ensuring a market presence in other Middle Eastern countries. The details of such a program have not been developed at this time, but key features would include low cost entry, and flexibility in responding to opportunities as they arise. It must, however, be much more than the opportunistic type of marketing which has been suggested in the past. It is appropriate, rather, to become proactive in seeking out the most lucrative opportunities rather than reactive in responding to opportunities which may, perhaps accidently, be directed at the business.

3. Organizational and Operational Arrangements Should Support the Service Orientation of the Business.

The current organization structure is based upon a largely merchandising orientation towards the business. This is reflected in the storefront type retail facilities, dealer distribution network, warehousing and inventory resources and mechanisms, and organization structure. In order to address the objectives of operating in primarily a service orientation, it would be necessary to consolidate significantly from current operations.

A service company should establish staffing levels based upon carefully developed projections for the future. Where a high degree of volatility may be involved with future projections, as will be the case with SADL/Datacom, mechanisms should be established which allow flexibility in supplying resources to projects as they come available. The organization should consist of a core group with general managerial, marketing and administrative responsibilities around which technical resources are provided on an as-required basis. The more limited the financial strength of the business, the more critical it is that this core group be very small and very cost effective, and that staffing of technical resources be highly flexible.

In the case of SADL/Datacom, a core management group consisting of the general manager, a marketing manager and a small administrative support group, would form the core of the company. If a marketing assessment deems it appropriate to market in each of the three cities, this core group could be supplemented by a full-time marketing staff.

It has become apparent that a key factor in marketing is a strong understanding and ability to work within the Saudi culture. As such, the marketing staff in each of the three cities should at least be Arab speaking. Technical expertise which is so critical to understanding and responding to business opportunities in these markets can be provided on an as required basis by the general manager and the marketing manager, both of whom will, therefore, have to have a technical orientation. In this manner, the strengths of MTS in telecommunications could be leveraged. To be effective the Arab speaking marketing staff must be of the highest possible quality.

Cost effectiveness in staffing for technical resources on individual projects is also critical. With one of the MTS/MTX strengths being in the area of project management, it would be appropriate that these be the primary skill sets of any Manitobans involved in the business, and that they be involved in project management roles rather than in operating roles. The object is to avoid keeping highly paid technical resources on full-time staff unless they are fully occupied on projects. This can be accomplished only by ensuring flexibility in the recruitment and staffing process.

Al Bassam International will play a pivital role. Although difficulties have been encountered in the past in getting sponsorship and temporary work visas approved, these cannot be allowed to continue. For the business to be viable under this scenario, Al Bassam International must ensure that resources can be recruited and obtain permission to enter Saudi Arabia in response to needs as sales are closed by the marketing staff.

Note that these resources need not be Canadians if Canadians are not cost effective for the work to be performed. We understand that highly qualified technical resources are available at lower cost from countries which include England, Germany, France, Japan, Korea, the Phillipines and a number of others. However, should this result in no significant Canadian participation, the justification for MTX's participation in the business should be reviewed.

It is essential that the administrative support provided to the organization have a high degree of financial management expertise. This extends beyond basic accounting and bookkeeping ability. We believe this expertise could effectively be provided remotely (i.e. by MTX), but it would require greater dedication to SADL operations and participation in management decision making than has occurred in the past, and greater direct managerial authority of staff performing financial functions on-site.

4. Management and Financial Information Systems Should Be Improved Substantially

In order to have any expectation of financially viable operations, it is essential that the current problems with management and financial reporting currently faced be overcome. Management cannot be expected to successfully direct, monitor and control operations and performance if it lacks the appropriate information systems. The needs extend beyond basic accounting systems and include daily and weekly reporting systems. Where such are in existence today, the issues of timeliness, accuracy, reliability and relevance must all be addressed.

For the operations proposed in the preceding subsections, a major focus would be on project management. Accordingly, project management oriented information systems would be essential. It must be recognized that traditional periodic accounting systems will likely not meet the day to day management information needs of managing projects.

Details on information system requirements can be developed in future stages. However, it should be recognized that this is a small company and it is not appropriate to consider custom designed software and state-of-the-art information systems, particularly when past experience indicates some difficulties in developing these in the Saudi environment.

5. Financial Management Must Be Enhanced

The body of this report identifies a number of concerns regarding financial management of Saudi operations. In general, these financial management responsibilities have rested with MTS and MTX. As a result, resolution of these issues will probably focus primarily in Canada, but will also be manifest in a number of ways in Saudi Arabia:

- Financial planning, and the whole business planning process, should be more clearly defined, with greater direction and participation in the approval process by the partners;
- Policies and procedures should be established to implement and maintain good financial management practices within Saudi operations. This includes management of cash balances, accounts receivable, inventories, leasehold obligations, and whatever local financing is used; and
- More effective control mechanisms will have to be developed and implemented.

Strong financial management is all the more critical, as are effective information systems, as a result of the extreme remoteness of operations from the managing partner.

6. Financing Must Be Improved and Financial Controls Must Be Developed.

It is quite possible that MTX's current investment, including receivables, may not be recovered except in the very long term at best. Notwithstanding, it is essential that the capital structure of the company, if it is to be viable in the future, reflect an appropriate level of funding. This would require, at a minimum:

- equity funding of all prior losses;
- an equity base, perhaps leveraged by long term debt, for any fixed assets; and
- appropriate arrangements for financing of working capital requirements.

While it is possible for the business, in some circumstances, to earn a return on costs that may be considered sunk at this point in time, the shareholders should know, from past experiences, that the company should not be required to start out in a deficit position. It is essential that the company be properly financed from the outset.

It is also imperative that financing mechanisms be in place which will ensure responsible and effective management of the capital requirements and cash flows of the business. The previous export financing arrangements will likely be less appropriate in this regard than local financing managed by the local managers of the company in Saudi Arabia.

Accounting practices in the past which have been brought to light or challenged in the body of this report include:

- capitalization of operating losses,
- treatment by partners of obligations for debts of closely associated companies, and
- performance measurement and reporting.

In order to improve financial reporting, the issue of the joint corporate status of SADL and Datacom Division of Al Bassam International must be resolved. It appears that the proposed change in product orientation away from merchandising would resolve the requirement to use Datacom Division. Accordingly, it may be possible to quite properly treat Datacom Division as an arms length company to the joint venture and maintain all operations of the partners within the umbrella of the joint venture company. Management has suggested that bidding by 100% Saudi owned companies is much more successful than by joint ventures. Should such discrimination, in fact, exist to the extent that the joint venture cannot operate, it would then be appropriate to consider terminating all MTX equity participation in Saudi and acting only as a supplier.

C. SOME ALTERNATIVE SUGGESTIONS FOR VIABILITY

During the course of the last four years of operations, management of MTS and MTX, as well as on-site management in Saudi Arabia, have wrestled with the problem of how to turn the business around. To date, these efforts have been unsuccessful except in some fragmented ways:

- The 1985 marketing program was very successful in increasing gross revenues by almost 100%;
- The 1986 business plan was successfully used to identify the need and timing for consolidation and major cutbacks in operating costs; and
- Efforts towards reducing operating costs in general, and fixed costs in particular, have achieved some gains.

In combination however, these efforts have not succeeded in generating profits.

The current general manager of SADL/Datacom has also produced a plan to restructure and reposition the business with the hope of becoming profitable. This plan, dated September 29, also suggests, as has been suggested in the preceding sections, that participation in the merchandising side of the business is not appropriate. However, the corporate structure submitted with this plan included a full time organization of 18 employees, and an operating cost structure which would break even at S.R. 13.0 million annually with 35-40% margins. Since these break even requirements would require a doubling of existing sales volumes for the networking and service businesses over what have been accomplished in the past, this plan is somewhat suspect. It also fails to address many of the issues identified in the preceding sections. Accordingly, although the basic concept of the plan, which dictates exit from the microcomputers market, appears valid, it does not resolve current weaknesses of the business nor does it adequately and completely identify alternative orientations.

D. CONCLUSIONS REGARDING VIABILITY

The business, in its current state, is not financially viable. It also fails to significantly address the other goals of MTX in operating in Saudi Arabia, specifically, to those provide challenging and satisfying employment opportunities and to develop new markets for MTS and Manitoba goods and services.

The business does, however, have some strengths. The most significant of these strengths are the skills and expertise that can be brought to bear by MTS/MTX employees in the area of new technology in data and telecommunications.

A market may exist for some of the services that MTS can offer as a telephone company (subject to final confirmation of market studies). To effectively serve these markets, a number of conditions, identified in preceding sections, would have to be met. These conditions relate to weaknesses in the existing organization which hamper SADL's ability to operate profitably under current circumstances.

The issue of the potential of return, or the extent to which the current investment by MTX can be recouped, has not been addressed. If MTS/MTX were able to successfully address the conditions for viability described in this report, the investment might be recouped in a number of ways:

- Cash returns through profits on operations;
- General economic benefits through the export of goods and services of MTS and Manitoba in general; and
- Intangible benefits by providing an opportunity for staff to expand their skills and abilities in a situation which has at least the potential for success and achievement.

Quantification of these plans cannot be made until the results of the marketing and valuation analyses are completed. It is essential to note that the market must drive future business plans.

To address these conditions for achieving viable, profitable operations in SADL/DATACOM would be a major undertaking for MTX. It would require a committment of managerial resources and expertise far in excess of that so far provided. Additionally, it would require a renewed committment by both partners towards the future of the business.

XI. RECOMMENDED COURSE OF ACTION

Following from the difficulties in financing noted above, and in the body of our report, and the relative financial positions of the two partners in the business venture, it is appropriate for the government of Manitoba to consult, as the owner of MTX, with its Saudi partner, Sheikh Al Bassam, to determine his expectations and commitments to the venture. Concern regarding the government's responsibilities to its customers and its obligations to third parties and employees must also be considered.

Subject to the results of the discussions with Sheikh Al Bassam, it appears that the ultimate interests of the Province of Manitoba would be best served by withdrawing from its Saudi Arabia operations. There are a number of reasons for this:

- Substantial losses have been incurred to date and, notwithstanding market assessments that are forthcoming, short-term prospects for profitable operations are not optimistic.

- The economic difficulties faced by Saudi Arabia at this time decrease the likelihood of significantly recovering investments made to date.

- There appears to be an inability to provide appropriate management direction and control to a business as remote as this, and in a country as culturally different from Canada as Saudi Arabia.

- As a Crown Corporation, MTS/MTX has to meet broader policy and strategic objectives that appear to be incompatible with this venture.

Despite the fact that there may be some potential for the future financial viability of the business, we believe that it may be incompatible with the role of a Crown Corporation of the Province of Manitoba. Depending on the outcome of the discussions with Sheikh Al Bassam and the information currently being gathered, it could be necessary to implement the appropriate arrangements for MTX to withdraw from its operations in Saudi Arabia. These arrangements must ensure that MTX is able to meet its obligations consistent with the policies of the Province of Manitoba.

Therefore, at this time, it appears that MTS/MTX should develop a tentative program to achieve the eventual withdrawal of MTX from Saudi Arabia. This program would require careful consideration of the contractual, legal, financial and other obligations of MTS/MTX.

A meeting with Sheikh Al Bassam should be held shortly. The purpose of such a meeting would be to establish:

- the expectations of both partners regarding the future prospects of the business;
- the options and relative positions regarding the partnership arrangements; and
- to advise Sheikh Al Bassam of the government's longer-term position with respect to its investment in SADL.

In summary, in our opinion, it is in the long-term interests of the Province of Manitoba to make arrangements for the eventual withdrawal from the investment in SADL by MTX.

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APPENDIX II DRAFT NOTES SUMMARY

APPENDIX I

TOTAL MTX EXPOSURE IN SAUDI ARABIA

APPENDIX I

TOTAL MTX EXPOSURE IN SAUDI ARABIA

A. CAPITAL INVESTMENT IN SADL

Original Investment	$794,053
MTX share of Operating Losses (@50%): to December 31, 1985 (S.R. 2,140,000)	(384,833)
January 1 to June 30, 1986 (S.R. 1,171,000)	(209,012)
Net Capital Investment (June 30, 1986) Using the Equity Method	200,208
Shareholder Advance (recorded by conversion of receivables)	2,000,000
Total Capital Investment in SADL	$2,200,208 Cdn

APPENDIX I

TOTAL MTX EXPOSURE IN SAUDI ARABIA

B. RECEIVABLES AND GUARANTEES TO ABI

			DATACOM	TELECOM
Receivables due at July 31, 1986			11,754,360	2,048,751
Loans outstanding at July 31 but paid by MTX by October 31, 1986:				
BNS #50	Paid August 20	338,464		
BNS #51	Paid August 20	156,138		
BNS #52	Paid August 20	64,916		
BNS #53	Paid September 10	128,220		
		644,307	687,738	
Roybank #27	Paid August 25	515,318		
Roybank #28	Paid September 30	177,194 (US)		
Roybank #29	Paid September 30	339,485		
			1,031,997	
BNS Note still outstanding				159,160
TOTAL*			13,474,095	2,207,911

* Note: This excludes shipments made by MTX subsequent to July 31, 1986.

TOTAL MTX EXPOSURE IN SAUDI ARABIA

C. SUMMARY OF TOTAL MTX EXPOSURE IN SAUDI ARABIA AT JULY 31, 1986

Net Capital Investment in SADL (Net of losses to July 31, 1986)	$2,200,208
Outstanding Receivables and Loan Guarantee:	
to Datacom Division of ABI	13,474,095
to Telecom Division of ABI	2,207,911
	$17,882,214

DRAFT NOTES SUMMARY

DRAFT NOTES SUMMARY

BANK OF NOVA SCOTIA LINE OF CREDIT
($000's)
Loans to:

	TELECOM				DATACOM			
			Paid by				Paid by	
	Drawn	Restructured	ABI	MTX	Drawn	Restructured	ABI	MTX
Fiscal Year								
1983/84:								
in US $	332.4	0	2.1	0	2,910.7	492.1	183.0	0
in CDN $	690.6	417.1	273.5	0	1,750.3	1,327.1	0	0
1984/85:								
in US $	82.9	0	160.1	160.1	0	0	366.0	843.3
in CDN $	985.2	0	0		1,197.4	324.7	849.0	
1985/86								
in US $	42.1	0	0	125.0	942.0	0	0	1,317.4
in CND $	1,684.0	0	1,326.3	855.7	1,305.6	0	157.9	849.1
1986/87								
in US $	0	0	0	0	0	0	0	650.9
in CDN $	159.2	0	0	487.2	0	0	0	745.5
TOTALS:								
US $	447.4	0	162.3	285.2	3,852.7	492.1	549.1	2,811.5
CDN $	3,519.0	417.1	1,599.8	1,342.9	4,253.3	1,651.8	1,006.8	1,594.6
@ 1.39 exch.	4,140.9	417.1	1,825.4	1,739.3	9,608.5	2,335.8	1,770.0	5,502.7
	100%	10%			100%	24.3%		
Balance outstanding - 159.2 (3.9%)			51.2%	48.8%			24.3%	75.7%

ROYAL BANK LINE OF CREDIT
(Datacom only)
($000)

	Drawn	Restructured	Repaid by	
			ABI	MTX
1983/84				
US $	117.9	0	0	0
CDN $	532.8	0	0	0
1984/85				
US $	1,878.4	0	456.4	184.0
CDN $	482.4	0	853.3	0
1985/86				
US $	2,455.0	0	343.3	2,473.0
CDN $	559.2	0	734.7	(353.1)
				Adjust in CDN$
1986/87				
US $	0	0	0	994.6
CDN $	0	0	0	339.5
TOTALS:				
US $	4,451.3	0	799.7	3,651.7
CDN $	1,574.4	0	1,588.0	(13.5)
@ 1.39 exch.	7,761.8	0	2,699.5	5,062.3
			34.8%	65.2%

Volume

5

MANAGEMENT AUDIT OF MTX

VOLUME V - REVIEW OF THE MANAGEMENT PROCESSES AND CONTROLS

November 12, 1986

Submitted to: MTX MANAGEMENT AUDIT STEERING COMMITTEE

Submitted by: H.R. TIDBY
D.M. NORMAN
M.A. BERKOWITZ

The
Coopers
& Lybrand
Consulting Group

Management Consultants

REVIEW OF THE MANAGEMENT PROCESSES AND CONTROLS

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EXECUTIVE SUMMARY

A. BACKGROUND

As part of our management audit of MTX Telecom Services Inc. (MTX), we have examined the company's organization and management control systems from the date of incorporation, January 15, 1982, to date. The detailed report is presented separately in Volume V; this summary report is organized under the headings of:

- Business planning.
- Organization arrangements and reporting.
- Management processes and controls.
- Human resources management.
- Assessment of management personnel.

MTX is a comparatively small organization, operating in a competitive business environment, outside the traditional boundaries established for the business activities of its parent company. The Manitoba Telephone System (MTS) had little or no experience in these markets, and the development of the broader mandate for MTX represented a significant change for MTS. We did not anticipate that MTX would not have the systems and controls which would be found in a mature Crown Corporation. However, we found that there were some critical deficiencies in the way in which the company was organized for operations during its first four and a half years. These deficiencies are described in our detailed report, and summarized below.

B. BUSINESS PLANNING

MTX started business in a comparatively small way, with limited financial and human resources. It is critical for young companies with limited resources to be highly selective in their markets and range of services. During its nearly five year history, there does not appear to have been any planning done which would restrict MTX's focus from a product, geographic or financial perspective. In essence, the MTX business mission has become "to undertake anything in telecommunications outside Manitoba which might be profitable and for which staff can probably be made available." We would have expected a reasonably comprehensive market analysis relative to key markets and, given the Company's mandate for marketing the skills of MTS personnel, an objective assessment of MTS's capabilities in those markets. We did not find that these analyses had been made.

Business planning has been primarily oriented to annual plans, without consideration of longer-term strategy and direction. The planning process has not been well managed; plans have been presented to the Board after the commencement of the fiscal year to which they relate, and approved three to six months into the year. This process provided neither the basis for sound exercise of business judgment nor effective communications to the company's shareholders concerning the appropriateness and risks of its undertakings.

C. ORGANIZATIONAL ARRANGEMENTS AND REPORTING

Within MTX, there is no clear differentiation of senior management responsibilities along functional, geographic or product lines. Dissimilar functions or activities are combined, such as international marketing with administration. The responsibility for the North American market is split between the President and the Vice-President, Marketing, despite the overlap in the prospective client market. The President is involved in numerous areas of activity inconsistent with his Chief Executive role, such as the responsibility for financial management.

The role and responsibility of the President of MTX are unclear, particularly in relation to the role and responsibility of the Managing Director, and in relation to the company's 50% interest in Saudi Arabia Datacom Limited.

Given the dependency of MTX on the resources of MTS, there appears to be no logic in the way in which MTX was positioned as a highly autonomous subsidiary. The Board of MTS had very little input or involvement with the activities of MTX despite the key inter- relationships between the companies.

Procedures are not in place to allow the MTX Board to exercise significant control over its Board and Management representatives in SADL.

D. MANAGEMENT PROCESSES AND CONTROLS

A significant portion of MTX's mandate requires the ability to plan, organize and manage a variety of projects. There is no dedicated project planning or management expertise within MTX. MTX relies on MTS to provide project planning and management capability, but MTS does not have much of the expertise required for planning the types of projects undertaken by MTX.

The financial planning process has been part of the annual plan, and has not addressed questions of major capital requirements. These tend to have been dealt with at the Board level on an ad hoc basis. Very little analysis was available to show whether debt versus equity financing alternatives were considered for the company's projects.

Operating budgets were prepared on a basis which proved to have little relation to actual results, and the value of the budget as an operating tool was limited.

The process of providing for an additional investment of $2 million Cdn in Saudi Arabia in 1985 raises significant questions about the adequacy of the information provided to the MTS Board, the Minister, Crown Investments and ERIC relative to the profit and loss sharing arrangements in Saudi Arabia between MTX and Sheikh Al Bassam, the company's partner.

Throughout its history, the Company has been beset with accounting problems, including late financial reporting and a weak system of internal accounting controls.

E. HUMAN RESOURCES MANAGEMENT

Our review of the human resources management system revealed that there were difficulties in the recruitment and selection process, inconsistencies in compensation practices, and limitations in manpower planning and development.

F. ASSESSMENT OF MANAGEMENT PERSONNEL

Our examination has revealed serious deficiencies in management decision making and the organization and control of MTX and its various ventures. Senior executives responsible for MTS and MTX must accept ultimate responsibility for exposing the Corporation to significant business risk and financial losses. We have not been able to determine the full extent of the losses incurred. However, we expect they will be substantial and could be in the range of $20 to $25 million Cdn. Messrs. Gordon Holland, Glover Anderson and Maurice Provencher initiated these ventures and were responsible for their results since the start up of MTX in 1982. The organization, staffing and investment proposals were begun under their direction. The Boards of Directors of MTS and MTX relied upon them as the key management executives to exercise sound business judgment and to direct and control these ventures, as approved. Sound financial and management control was not established from the very start of operations. In addition, the Corporations' (MTX and MTS) assets were placed inappropriately at risk by the business and contractual arrangements utilized for these ventures. In particular, the structure and business arrangements for the CEZAR/INET venture showed poor business judgement. At various times, there was evidence of serious problems. These individuals failed to take appropriate corrective action and to adequately communicate these difficulties.

As President and Chief Operating Officer of MTX since 1984, Mr. Donald Plunkett has worked diligently to develop MTX and deal with its problems. However, the company has lacked adequate management resources and financial controls from its beginning. He has failed to deal with these critical needs. In addition, he initiated the venture with US SPRINT and CEZAR. Poor business judgement was displayed in the structuring and management of these activities. The organizational structure and management accountabilities within MTX remain inadequate. The losses and problems within MTX have been prolonged by his failure to take corrective action.

Mr. M.A. Aysan undertook the detailed field research and planning for the Saudi Arabia partnership with Sheikh Al Bassam. At the insistance of the Sheikh, he was appointed General Manager of SADL for three years after the start up of operations in 1982. He endeavoured to return to Canada in the mid-term of his appointment. However, he was persuaded to complete his term of appointment and proceeded to do so. He was hard-working in fulfilling his mandate. However, there is evidence of poor judgement in the content of business plans prepared for consideration by the Boards of SADL. These plans were not approved by the Board of Directors of MTS and MTX. The decision to shift the business of data communications to micro-computer products was inappropriate. The staffing of SADL was focused on providing technical resources rather than on marketing and selling capabilities. Many of the serious financing and business problems which have become evident in 1986 were initiated during Mr. Aysan's tenure as General Manager.

In summary, the company had inadequate management resources and leadership throughout the period from its start up of operations, in 1982, to date.

G. CONCLUSION

Many of the deficiencies which we identified are understandable in an immature organization in a start up mode, and particularly in a business environment which is distinctly different from the one in which the organization's management received their training.

However, the lack of an adequate strategic focus, i.e. "What business are we in?," the unstructured organizational arrangements, and the lack of adequate project planning and management information systems are critical weaknesses which should have been addressed. Furthermore, during its three-year history, as MTX evolved and major contracts were secured, the appropriate corrective measures were not put into place.

I. INTRODUCTION

A. BACKGROUND

The economic downturn in the western economies in the early 1980s, and the rapid pace of change in the telecommunications industry resulted in organizational pressures within telephone companies in Canada. These included the need to downsize certain operations and decrease employment levels in order to reduce costs. However, at the same time, one of the cornerstones of the policies of the Federal and Provincial governments was the pursuit of job creation.

Certain oil exporting nations had achieved positions of leadership in the world's economic growth and, at a time when job opportunities were declining at home, the demand for technically skilled western resources had burgeoned overseas. The Manitoba Telephone System (MTS) had first hand experience of this growth since it had been providing staff for Bell Canada contracts in Saudi Arabia since 1978. In 1981, MTS was actively participating in the preparation of a major joint proposal with Bell to provide Spectrum management to Saudi Arabia. It was known that other telephone companies, including Bell and Alberta Government Telephones, were seeking markets outside of their traditional geographic territories. It was, therefore, a logical step for MTS to seek to expand the base of its business activity in Saudi Arabia.

MTX Telecom Business Inc. (MTX) was incorporated on January 15, 1982, as a wholly-owned subsidiary of MTS. How MTX organized itself to do business in Saudi Arabia, and then broaden its horizons to other markets outside of Manitoba is described in this segment of our report.

Our comments should be considered in the context of the environment in which MTX was created, and the nature of its mandate. MTS had been providing telephone and related services to Manitoba for many years, and the formation of MTX to pursue business prospects outside the borders of the province represented a significantly new and different venture for the Company. MTS had very little or no experience of doing business in a competitive environment in other jurisdictions. MTX started in quite a modest way in 1982, with invested capital amounting to $750,025. This was increased to $1,500,025 in 1983 to provide for the cost of the investment in Saudi Arabian Datacom Ltd. (SADL). As its activities grew, it became increasingly apparent that the telephone company lacked the organizational and management experience needed to deal with the business environment in which it now found itself. Nevertheless, we found that the concept of marketing MTS's technical expertise in telecommunications outside of the province had engendered a high degree of enthusiasm, energy and excitement within the company.

B. SCOPE OF OUR EXAMINATION

The Coopers & Lybrand Consulting Group was appointed on August 19, 1986, to review and assess the operations of MTX. Specific terms of reference were provided in connection with this review, and included:

- Review and assess of the adequacy and accuracy of management and operations information provided to the Winnipeg headquarters, to the MTX Board and to the government.

- Review and assess the legal structure, capital structure and financing of MTX to determine their appropriateness and adequacy for the types of business in which MTX is involved.

In order to meet these terms of reference, we have reported under the following headings:

- Business planning at MTX.
- Organization arrangements and reporting.
- Management processes and controls.
- Human resources management.
- Assessment of management personnel.

C. APPROACH

Our approach to the assignment was to conduct a series of interviews with representatives from Government, the Board of Commissioners of MTS, the Board of Directors of MTX and present and past employees of MTS and MTX. A list of the individuals interviewed is attached to this report as Appendix I. The interview process was supplemented by a review of documentation, including the annual business plans of MTX, annual financial statements, Board minutes and reports, submissions to government, and internal audit working papers. We also examined documentation dealing with specific projects, and reviewed the management letters of the company's statutory auditor and the Provincial Auditor's reports. The results of these activities are synthesized into the following report.

MTX PRODUCTS/SERVICES

SWITCH EQUIPMENT	Consulting	Contract Labour	Eng., Furnish & Install	Products
• Central Office	X	X	X	X
• C.O. Peripherals	X			X
• P.T.	X	X	X	X
• PABX	X	X	X	X
• PABX Peripherals	X			X
• Training	X			X
NETWORK EQUIPMENT FACILITIES				
• Broadcast Industries	X	X	X	X
• Network Peripherals	X			X
• Cable	X	X	X	X
• Training				
NETWORK MANAGEMENT AND SURVEILLANCE	X		X	X
MARKET ANALYSIS AND PRACTICAL PLANNING	X			
INTERNAL ORGANIZATION	X			
PLANNING	X			

II. BUSINESS PLANNING AT MTX

Since its inception in 1982, MTX has diversified rapidly to offer a broad range of service offerings. The company describes its services as falling into three basic categories. These are:

- Consulting,
- Contract labour, and
- Engineering, furnishing and installing.

MTX feels there is a definite product for most of these. The facing page shows a categorization of these services taken from the 1986/87 business planning documents. The marketing of MTX's products/services is achieved in a number of ways.

- Direct Sales by MTX, e.g., Shared Tenant Services, Equipment
- Joint Marketing Agreement, e.g., Total Network Management
- Distributorships, e.g., Teleficient, LINE-1, CDR
- Equity Investment, e.g., SADL, GRASSROOTS, INET
- Consortia, e.g., CCI

This section reviews the quality of business planning that has been done by MTX or respecting MTX. In reviewing business planning efforts, we have taken into consideration the fact that MTX is a comparatively small organization. However, MTX is also a strategic business unit of corporate MTS and was established to achieve certain missions of the parent corporation.

A. BUSINESS MISSION AND STRATEGIC OBJECTIVES WERE NOT FULLY DEVELOPED

Mission statements were developed early in MTX's history. These are shown overleaf. Interviews with senior

MTX MISSION STATEMENT

- Be a high quality provider of telecommunication services outside of Manitoba in areas where MTS has assured expertise and resources.
- Be financially self-sufficient, and provide an acceptable return to MTS on its resources utilized.
- Be a good corporate citizen.
- Provide a rewarding, challenging and personal growth environment which develops employee competence, proficiency and satisfaction.

managers and Board members revealed that the prime rationale for creating MTX seemed to be:

- The legal requirement to have a subsidiary for potential participation in the Spectrum management contract between the Canadian Federal Government and Saudi Arabia.
- To deploy surplus MTS personnel because of the economic downturn of the early 1980's.
- To provide an additional source of net revenue to offset declining MTS profitability.

Glover Anderson, the Executive Vice-President of MTS, and Managing Director of MTX, indicated that "making money was not the prime purpose". It was "to employ MTS people and provide them with an enriched environment".

Interviews with senior managers indicate some conflicting views on what the role of MTX should be. This primarily relates to whether it should be in the business of providing "professional" services and its relation to MTS. Barry Gordon, Vice-President of MTS and SADL Board member, stated that MTX's relationship to MTS "really isn't that clear. Sometimes they are our sales arm external to Manitoba. Hence they have to take care of our surplus and undertake things which can be replicated and this runs all the way through to being relatively independent and just coming to MTS for expertise and money. Our view of who they are varies on any given day. Ask the majority of people and you would not get a consistent opinion." Gordon Holland, the President of MTS, stated that he "had always been a great advocate of professional services as opposed to sales of terminals". And, further, that MTX's mission was better served "on the people side than on the 'tin' side".

MTX's mission statements provide a useful umbrella, but do not serve to define MTX's business niche and focus. This is exemplified by the current confusion over MTX's business purpose. It is critical for young companies to be highly selective in their markets and range of services. There does not appear to have been any planning done which would restrict MTX's focus on either a product, geographic or financial basis.

There is a total absence of any longer-term objectives, strategic or otherwise. At a minimum, one would expect to find some longer-term objectives on:

- Degree of use of MTS staff and technology.
- Market position.
- Profitability.

The absence of any long-term goals or direction means that appropriate strategies for achieving them cannot be reviewed and assessed. In essence, the MTX business mission has become "to undertake anything in telecommunications outside Manitoba which we think might be profitable and for which staff can probably be made available".

B. THERE IS A LACK OF BUSINESS ASSESSMENT

Given the organization's relative youth and size, one would anticipate that only selective business assessments would have been done. In a more mature corporation, there should be fairly comprehensive assessments of the external environment, including markets, economies and sociopolitical trends, coupled with rigorous evaluations of the internal strengths and weaknesses of the organization and stakeholder expectations. For MTX, we would have expected some reasonably comprehensive market analyses relative to key markets, as well as an objective assessment of MTS capabilities for MTX markets. We can find no evidence of any significant market or business analyses being done to support the creation of the joint venture in Saudi Arabia, the investment in Cezar technology and INET or the effort directed at selling Total Network Management Systems in North America. We can also find no evidence that there has been any systematic and objective review of the competitive strengths and weaknesses of MTS's capability relative to MTX's business opportunities.

C. BUSINESS ISSUES HAVE NOT BEEN FULLY ANALYSED AND ADDRESSED

In its nearly five-year history, MTX has been confronted with a number of business issues which have had an impact on the future direction and viability of the business. In our interviews and in our review of MTX's business plans, we cannot identify much effort directed at fully understanding these issues or developing alternatives and strategies for addressing them in any comprehensive way. Some of the key business issues which have arisen and which have either not been identified or fully explored are:

- Attractiveness of offshore markets versus North American, relative to cost and ability to succeed.

- Appropriateness of joint marketing agreements with others for selling MTX products versus direct selling efforts.

- The merits and disadvantages of becoming a business that acquires technology for re-sale through distributorships and/or equity investments.

- Dependence on scarce MTS management and professional resources for marketing and delivery of MTX products.

- Adequacy of MTX management and marketing resources to undertake current and planned ventures.

The existence of these business issues has had some effect on the business direction of MTX. However, there are few data to indicate that they were adequately explored or that alternative strategies were identified and assessed.

D. THE PLANNING PROCESS IS NOT WELL MANAGED

Essentially, there is no well developed business planning process. Our comments can best be summarized as follows:

- There is no established process for business planning and the format tends to vary from year to year.

- Business planning has been primarily oriented to annual plans without longer-term strategy and direction.

- The MTX Board focus, with the exception of the 1986/87 plan, was primarily oriented toward approval of the annual financial plan or specific projects.

- Business plans have been generally presented to the Board after the commencement of the fiscal year and are approved three to six months into the year.

- With the exception of 1986/87, business plans were prepared solely by the Operations Officer or President.

- There are no processes in place for integrating MTX plans into MTS's plans except for the presence of MTS executives on the MTX Board, despite the critical inter-dependencies relative to staff and financial resources.

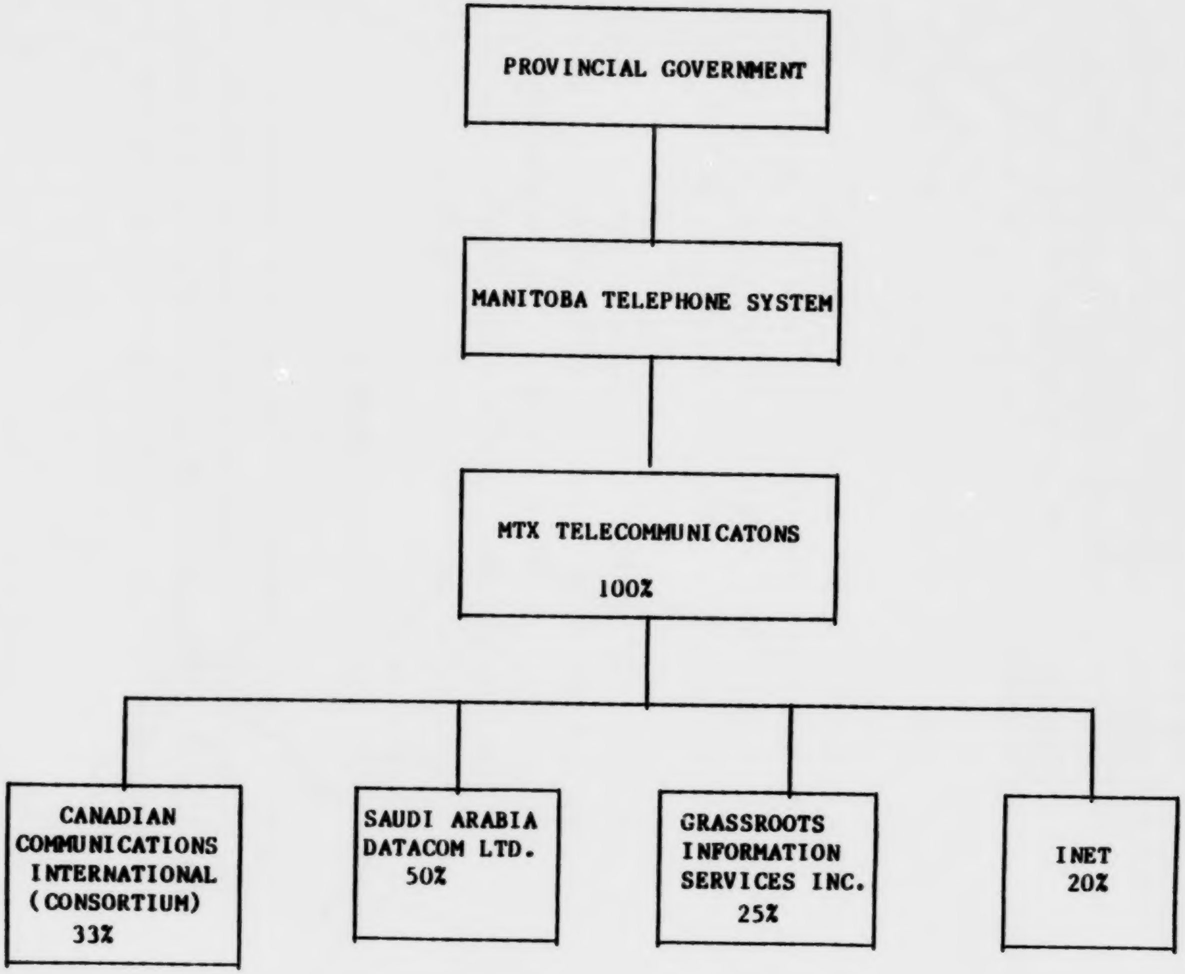
- MTX staff are generally not aware of MTX plans.

- Little attempt has been made to measure results against business plans, other than financial revenues on products and overall net income, or to assess the degree to which MTX's mission is being met.

Overall, the business planning of MTX is weak, even given its size and length of existence. It has not provided the basis for the sound exercise of business judgment and for effectively communicating to its shareholders the appropriateness and risks of its undertakings.

III. ORGANIZATION ARRANGEMENTS AND REPORTING

This section describes the organization arrangements within MTX and the structural and reporting relationships between MTX and MTS, SADL and the Provincial Government. Where appropriate, deficiencies or concerns regarding these arrangements are identified.


PROVINCIAL GOVERNMENT
MANITOBA TELEPHONE SYSTEM
MTX TELECOMMUNICATONS
100%
CANADIAN COMMUNICATIONS INTERNATIONAL (CONSORTIUM)
33%
SAUDI ARABIA DATACOM LTD.
50%
GRASSROOTS INFORMATION SERVICES INC.
25%
INET
20%

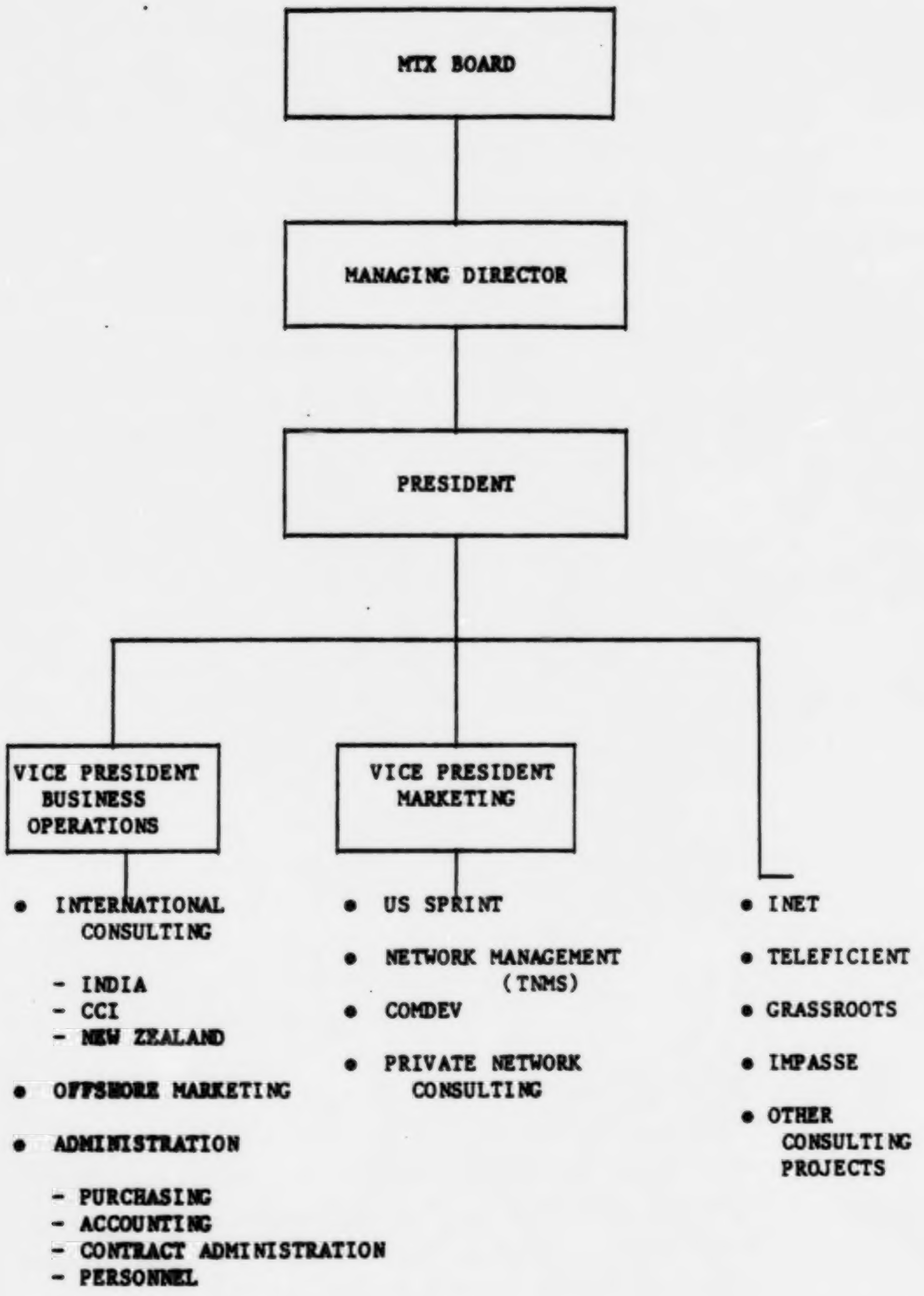
A. THE CURRENT STRUCTURE

The facing page depicts the structural relationship of MTX to MTS, and various other entities.

- MTS is a Crown Corporation, responsible to the Provincial Government.
- MTX is a wholly-owned subsidiary of MTS.
- MTX has various equity or financial interests in other entities.

INET	Distribution of ACT and LINE-1 systems.
CCI	Consortium of Western Canadian telephone companies marketing offshore, particularly China.
SADL	Engineering and installation services relating to data communication systems and products in Saudi Arabia.
GRASSROOTS	Computer-based information service for farmers and agri-businesses.

MTX is the vehicle chosen by MTS to market and direct its business activities outside the Province of Manitoba. The organization structure of MTX is shown overleaf. This structure was in place up to the departure of Wayne Wilson, Vice President, Business Operations in the summer of 1986 for health-related reasons.


MTX BOARD
MANAGING DIRECTOR
PRESIDENT
VICE PRESIDENT BUSINESS OPERATIONS
VICE PRESIDENT MARKETING
• INTERNATIONAL CONSULTING
- INDIA
- CCI
- NEW ZEALAND
• OFFSHORE MARKETING
• ADMINISTRATION
- PURCHASING
- ACCOUNTING
- CONTRACT ADMINISTRATION
- PERSONNEL
• US SPRINT
• NETWORK MANAGEMENT (TNMS)
• COMDEV
• PRIVATE NETWORK CONSULTING
• INET
• TELEFICIENT
• GRASSROOTS
• IMPASSE
• OTHER CONSULTING PROJECTS

B. REVIEW OF MTX ORGANIZATION

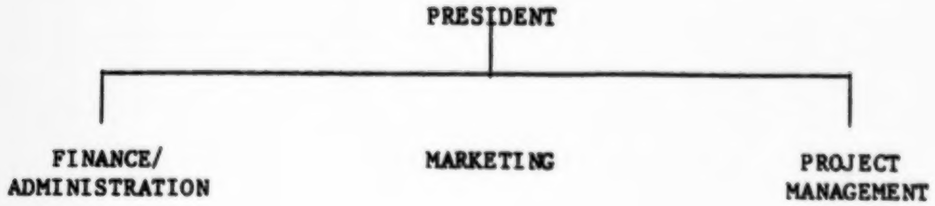
A number of weaknesses and deficiencies were observed respecting the organizational arrangements for MTX itself.

1. Weak Organization Strategy

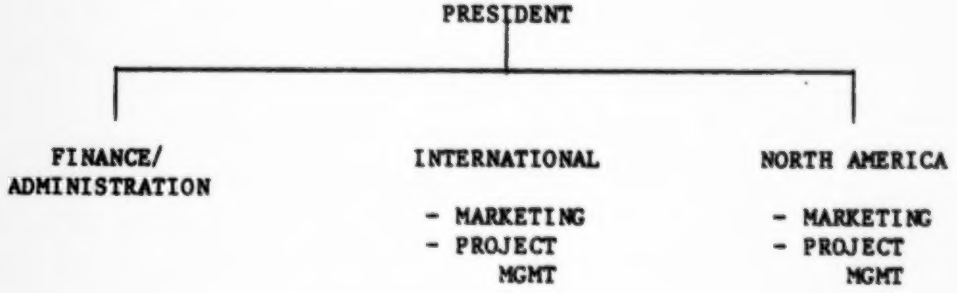
The apparent organization strategy is stated by Don Plunkett, the President of MTX as being "a fluid organization". The 1986/87 business plan states that "MTX remains very responsive to the demands of the market place due to its flexible management structure. MTX can react quickly to changing priorities and the senior management team is able to exchange roles in order to meet current objectives." While there is merit in being able to adjust to some changing market and project priorities, there is a failure to identify and address the critical factors for organizational emphasis and delegation. Normally, organizations are designed around some logical definition of functional, geographical or product/service mandates which support the business strategy. The following page depicts the range of strategies that might be applied to MTX. The choice of organization strategy, or variant thereof, is a function of appropriate business emphasis and requirement for senior staff leadership and control. Using the categories shown, MTX might be described as follows:

POTENTIAL RANGE OF ORGANIZATION STRATEGIES

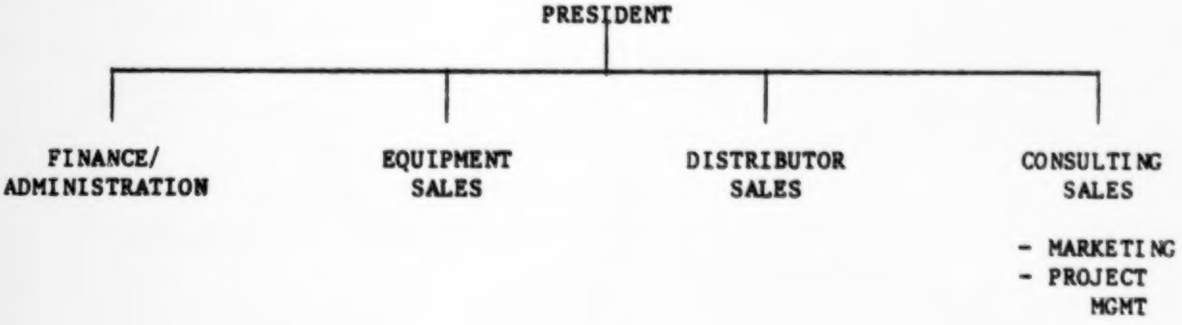
RIMARILY FUNCTIONAL


PRESIDENT
FINANCE/ ADMINISTRATION
MARKETING
PROJECT MANAGEMENT

RIMARILY GEOGRAPHICAL


PRESIDENT
FINANCE/ ADMINISTRATION
INTERNATIONAL
- MARKETING
- PROJECT MGMT
NORTH AMERICA
- MARKETING
- PROJECT MGMT

RIMARILY PRODUCT/SERVICE


PRESIDENT
FINANCE/ ADMINISTRATION
EQUIPMENT SALES
DISTRIBUTOR SALES
CONSULTING SALES
- MARKETING
- PROJECT MGMT

PRESIDENT

- International
  - Marketing
- North America
  - Distributor Sales
- Finance

V.P. BUSINESS OPERATIONS	V.P. MARKETING
- International	- North American
- Marketing	- Equipment Sales
- Project Management	- Distributor Sales
- Equipment Sales	- Consulting Sales
- Administration	- Project Management

This demonstrates that:

- The President is involved in numerous areas inconsistent with his chief executive role.
- Unlike functions or activities are combined, such as international marketing with administration.
- North American responsibility is split between the President and VP Marketing, despite overlap in the prospective client market.
- There is no clear specialization/differentiation on functional, geographic or product lines at the senior management level.

2. Poor Definition of Responsibilities

Position responsibilities are poorly defined. Job descriptions exist only for some minor positions in the organization. Key results are identified only in sales revenue terms or project milestones as part of the compensation arrangements for some contract employees and reassigned MTS staff. The approved final authorizations document does not provide for any delegation below the level of the President. As described later, there is also no budget accountability delegated to any management positions below the President.

3. Key Management and Business Functions Are Missing or Poorly Addressed

There are a number of management functions which have been inadequately defined and staffed. These include:

- **Financial management:** This has been retained by the President, despite the support staff being accountable to the Vice President, Business Operations. Other than the President, there has been no financial management capability. Given both MTX's responsibility for assisting SADL in financial management and the increasingly complex financial requirements of MTX, this is a critical weakness.

- **Marketing management:** Despite the position of VP Marketing, there is no position dedicated to the overall marketing and sales function. This is distributed through the three senior managers, two of whom have no prior background or experience in marketing and sales. There is also a lack of qualified resources to undertake market planning, research and sales.

- **Project management:** A significant portion of MTX's mandate requires the ability to plan, organize and manage a variety of projects. There is no dedicated project management expertise within MTX. MTX relies on MTS to provide project management capability, but MTS does not have much of the expertise required for managing the type of projects undertaken by MTX or performed in an MTX business environment.

- **Business planning and analysis:** Resources are not available within MTX to undertake the business planning and analysis required for the type of business which MTX has become, with significant investments and complex business arrangements.

4. The Role of the MTX Board Is Not Fully Clarified

The responsibility and role of the MTX Board were not clarified beyond financial authorization levels until 1986. At that time, both the MTS Board and MTX Board approved a document covering the delegation of authority and reporting relationships of MTX/MTS. Previously, the only documentation of the Board role had been a 1982 final authorization document. The updating of the 1982 document was discussed, but deferred by the MTX Board in June, 1984. A revised document was approved in June, 1985 for submission to the MTS Board, culminating in the 1986 agreement.

The current statement of the Board's role and responsibility is not clear in a number of key areas. These include:

- Appointment of officers.
- Compensation policy of MTX.
- Compensation of officers.
- Review of performance of officers.
- Approval/termination of MTX service offerings.

5. The MTX President's Role and Accountability Are Not Fully Clear

The role and accountability of the President of MTX are not clear in a number of respects. The 1986 Board-approved delegations of authority state that his responsibilities shall include:

"To implement the Business Plan, operating and capital budgets as authorized by the Board or seek approval of revisions as may be required from time to time to accommodate unforeseen and unanticipated events."

In a letter dated September 20, 1985, to D.J. Plunkett from S.G. Anderson regarding Plunkett's compensation arrangements from October 1, 1985 to March 31, 1987, Anderson states:

"Your basic deliverables are defined as follows:

1. To achieve the goals, objectives and net income of the 1985/86 Business Plan as set out at the September 5, 1985 MTX Board meeting (see attachment).

2a) Influence strategic direction, current status and problem resolution of Datacom and ensuring appropriate products and skills are in place to achieve Datacom Business Plan.

2b) Key indicators and related achievement monthly.

2c) Financial wellbeing of Datacom monitored and status reported monthly."

Our interview with the previous chairman of MTS/MTX, Saul Miller, indicates that, on the change of Plunkett's title from Operations Officer to President in 1984, he was not prepared "to give him the full powers of the presidency so I wanted Glover Anderson to retain that". As explored later, Glover Anderson's role mitigates against having a clear picture of Plunkett's responsibility. Both Plunkett and key managers of MTX perceived Plunkett as responsible on a day-to-day basis to Anderson. Yet, the Board-approved document would seem to indicate accountability to the Board except for joint approval by both Anderson and Plunkett of authorization levels, above the President's level but below that of the Board.

The President's responsibility for SADL is also not fully clear. The President indicates that he was responsible for assisting the company in planning and financial management, and providing staff and equipment. His compensation contract document, cited above, would indicate a stronger role. It is not clear to whom he is accountable for SADL. The SADL Board? The MTX Board? The Managing Director/Vice Chairman, SADL?

Interviews indicate that Plunkett was hired by Anderson with the involvement and assistance of Holland and Provencher. Anderson negotiated the employment contracts with Plunkett, on behalf of MTS, and has reviewed his performance.

6. Position Requirements of President's Role Are Not Well Defined.

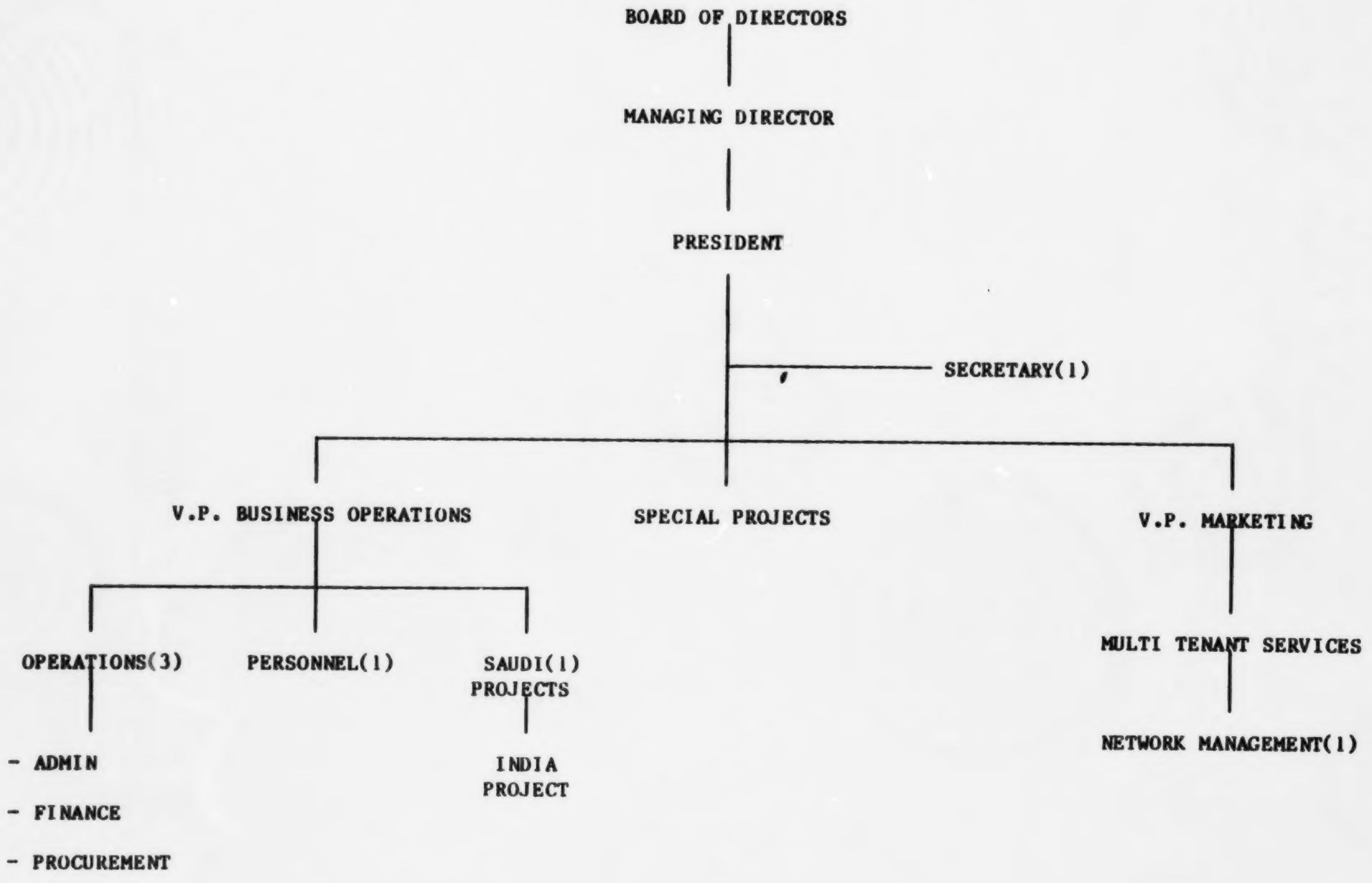
In establishing the position of Operations Officer of MTX and, subsequently President, the position requirements were not defined. At the time of Plunkett's hiring, the broadening of business scope of MTX, beyond SADL support, included expansion of international consulting and the marketing of total network management systems. Given the nature of MTX' business and plans, we would have anticipated that the company would seek an individual with:

- General management experience.
- Strong marketing orientation and knowledge.
- Knowledge of international and North American markets.
- Experience in technical consulting and/or telecommunications.

Don Plunkett's experience did not fulfill any of these requirements.

The process for hiring Don Plunkett is not clear. Anderson states that Gordon Holland suggested that

MTX TELECOM SERVICES INC. ORGANIZATION


BOARD OF DIRECTORS
MANAGING DIRECTOR
PRESIDENT
SECRETARY(1)
V.P. BUSINESS OPERATIONS
SPECIAL PROJECTS
V.P. MARKETING
OPERATIONS(3)
- ADMIN
- FINANCE
- PROCUREMENT
PERSONNEL(1)
SAUDI(1) PROJECTS
INDIA PROJECT
MULTI TENANT SERVICES
NETWORK MANAGEMENT(1)

Plunkett be brought into MTX. Gordon Holland indicates it would have gone through the Personnel Manager. Both had known Plunkett at Manitoba Data Services.

7. Role of Managing Director of MTX is Unclear

In June, 1984, the MTX Board approved the appointment of Plunkett as President, the title previously held by Glover Anderson. The Chairman at that time, Saul Miller, indicated that he was urged to do so at the request of the MTS executives on the Board. The rationale provided by Plunkett and Anderson is that the title of Operations Officer carried no weight in marketing. Similarly, Anderson wanted more than the title of Director so was named Managing Director which is a common synonym for President in Europe. However, other than financial approval levels, there has been no clarification of the role of Managing Director and Glover Anderson's responsibilities at MTX. The 1985/1986 MTX business plan depicts the MTX organization as shown on the facing page. When queried regarding what the title of Managing Director means, Anderson replied "I guess I'm a Director of MTX, responsible for managing the organization. I guess with that title you could say I was responsible for everything in MTX. I didn't delve into MTX or perform on a day-to-day operation basis." On the question of to whom Don Plunkett did report, he stated: "To the Board and to me. He used to call me all the time and ask for advice." Gordon Holland indicated that he "saw Glover as CEO of MTX until last year. Last year (sic) it was changed to Managing Director providing a supporting, counselling role to the President."

In summary, the MTX organization is poorly thought through in terms of critical functions and roles to support the business and is poorly defined relative to the responsibilities of the Board, the Managing Director and the President. The skills and experience required for the latter position were also not defined and are significantly deficient from what might reasonably be expected.

C. INTERRELATIONSHIP OF MTX TO MTS

The positioning and on going relationship of MTX to its parent, MTS, has some critical weaknesses.

1. Positioning of MTX

There appear to have been no logic for or analysis of the way MTX was positioned as a highly autonomous subsidiary. We understand that, for legal and regulatory considerations, it was considered appropriate for MTS to conduct its non-Manitoba business under a separate legal entity. The business of MTX, however, was and is highly dependent on MTS for staff and technology in a close operational sense. We would have anticipated that MTX would have been established as a strategic business unit of MTS corporate under the overall direction of either the President or Executive Vice-President of MTS. The Board of MTX would act only to fulfill the statutory requirements. This arrangement would have facilitated the integrated business planning and resource allocation necessary to achieve the strong interrelationship required between the two organizations and yet provide the opportunity for sufficient separateness from the utility operations to achieve MTX's more entrepreneurial mandate.

Our interviews were unable to ascertain who recommended the current structure and on what basis. Normally, we would expect the Chief Executive Officer of the parent corporation to recommend such arrangements to the parent board.

2. Accountability of MTX Board to MTS Board

The accountability of MTX to the parent corporation remained undefined until 1986. Until that time, other than representation of MTS Board members and executives on the MTX Board, the only control by MTS was the level of capitalization of MTX.

Reports of MTX's plans, activities and performance to the MTS Board were infrequent until 1985. To some extent, this may have occurred because the Chairman of MTS was also Chairman of MTX until his resignation in 1985. The 1986 document approved by the MTS and MTX Boards sets out that the Chairman of MTX will "with the assistance of the President, provide timely reports to the MTS Board of project status, significant MTX activities, MTX financial statements with any relevant comments of the MTX Board and the MTX business plan, after approval by the MTX Board."

The current, documented accountabilities of the MTX Chairman do not require submission of MTX plans and budgets for approval by the MTS Board. This delegation of power removes from the MTS Board the ability to set priorities and allocate staff and financial resources between MTS and MTX.

The recently approved accountabilities of the MTX Chairman also require him to "provide reports as required to the Minister responsible for the Manitoba Telephone Act, for his information and, subject to his approval, for submission to ERIC." This delegation of power dilutes the responsibility of the MTS Chairperson for reporting and communicating to the Provincial Government. In addition, it does not provide reasonable assurance to the Minister that MTX ventures are known to and approved by the provincially appointed MTS Board and Chairperson.

3. Accountability to MTS Management for MTX.

The accountability of senior management of MTS for MTX is also not clear. The President, Executive Vice-President and Vice-President of Finance sit on the MTX Board with two members (formerly three) of the MTS Board. Gordon Holland, as the senior MTS officer, is in a strong position relative to the two more junior MTS officers. Hence, the President of MTS is effectively positioned to have a major influence on the MTX Board. Gordon Holland, when queried on how management of MTX is controlled by MTS, indicated that "MTX has its own Board. It is the responsibility of the Board to establish the management and governmental process." Holland indicated that, as General Manager/President of MTS, there was no clear line of responsibility of his office for MTX except an overall responsibility to assist the MTS Board in protecting its investment.

Glover Anderson's role has been referred to earlier. Maurice Provencher's role as Chief Financial Officer of MTS, relative to the subsidiaries, is not clear. There is some question of conflict of interest between Provencher's role as Chief Financial Officer of MTS and as a director of both MTX and SADL because of his corporate responsibility for reviewing and reporting on the integrity of MTS's financial accounts and affairs. He indicates that he has voiced his concern, but was not allowed by Gordon Holland to resign from his directorships in MTX and SADL.

D. INTERRELATIONSHIP OF SADL TO MTX AND MTS

MTS' 50% interest in SADL is held by MTX. Two MTX Board members, Anderson and Provencher, are on the Board of SADL, with Anderson designated as Vice-Chairman by the Shareholder's Agreement. Barry Gordon, MTS Vice-President, Network Engineering and Development, is the third MTS representative on the Board. The Shareholders' Agreement further provides that Sheikh Al Bassam will appoint the Chairman, with a casting vote, two other Board members and the President. MTX will appoint the General Manager. Our review indicates that:

- Processes are not in place for the MTX Board to exercise significant control of its representatives in SADL except for approval of capitalization:
    - Business plans and strategies are reviewed after the fact by the MTX Board.
    - Major SADL business decisions such as the cancellation of Al Mursil (the major Electronic

Mail network product) and the appointment of the new General Manager, McInnis, were taken without reference to the MTX Board.

- There is no one individual accountable to the MTX Board for SADL operations.

- The responsibility of the MTX-appointed General Manager of SADL to the MTX President and MTX Board is not clear. Conflicting direction appears to have been provided by MTS/MTX representatives on the SADL Board and the MTX President.

- While the MTX President has a certain level of responsibility for SADL and for significant servicing of SADL by MTX, he is not a member of the SADL Board nor present for its meetings.

- The MTS Board is considerably distanced from the SADL operations and has no control except through capitalization of MTX and MTX Board appointments. Until recently, it has received limited reports on SADL plans and activities.

By way of comparison, arrangements could have been structured whereby the MTX Board would approve overall business strategies and guidelines under which MTX/MTS representatives on the SADL Board would be expected to conduct themselves. Also, responsibility for MTX's investment in SADL could have been vested in one staff member. Logically, this should be the MTX President position.

E. INTERRELATIONSHIP OF MTS/MTX AND PROVINCIAL GOVERNMENT

The key interrelationship of MTS/MTX to the Provincial Government is through the Minister. However, the Minister has traditionally held other portfolios in addition to the responsibility for the Telephone Company. For example, the present Minister is responsible for Labour and Consumer and Corporate Affairs. The existence of an established executive and the appointment of an independent Board of Commissioners has resulted in the perception that the Minister's involvement in MTS is not expected to be as great as for a government department. The Minister would be briefed periodically by the Chairperson of the Board, and sometimes by the chairperson accompanied by the President and Chief Executive Officer. The Minister is also kept informed about the operations of the telephone company through his Telecommunications Group which is responsible for monitoring telephone policy and regulation. A member of this Group is an observer at MTS Board meetings.

A further interrelationship between MTS and the Government is through the Public Utility Board. The Board holds public hearings on matters dealing with rate hearings and regulation. Questions may be raised at the Board regarding the telephone company's cost base for rate making purposes, but the relationship is essentially at arms length. The Board would not normally deal with matters pertaining to MTX.

For 1983, a review of Crown Corporations' exports carried out under the guidance of the Economic and Resource Investment Committee (ERIC), recommended the development of Provincial Government policies related to eight areas. Thereafter, four areas - business conduct, planning, investment, purchasing and procurement - were identified as priorities, and policy development was initiated. Manitoba Crown investments developed, in concert with exporting Crown Corporations, policies and guidelines in those four areas.

The Department of Crown Investments was set up to oversee the operations of 18 provincial Crown Corporations. MTS was named as one of those corporations, but MTX was not. In 1983, Crown Investments initiated a pilot project for corporate planning in four Crown Corporations, one of which was MTS. However, after the project had begun, MTS withdrew, and was exempted from the exercise. Crown Investments was represented on the Boards of all the Crown Corporations under its jurisdiction, except Manitoba Hydro, which had a Board member from the Manitoba Energy Authority. In 1985, the Crown Investments representative was removed from the MTS Board. The relationship, therefore, between MTS and Crown Investments is tenuous.

However, in October of 1985, the Manitoba Telephone System/MTX Telecom Services Inc. submitted a request to ERIC through the Minister for the increase in capitalization of MTX Telecom Services. The request was reviewed by Crown Investments and an assessment note passed to ERIC/Jobs Fund Board. Crown Investments recommended:

- That ERIC agree to allow the transfer of $6,080,000 from MTS to MTX for investment in Datacom and Microtel, the venture involving Cezar Industries, and the proposed venture in India.

- That ERIC agree to allow MTS to set aside a further $2,420,000 for MTX to draw down for specific projects such as the proposed joint venture with western

Canadian telephone companies, subject to MTS board approval of any specific project.

- That ERIC direct the MTS board to approve further projects only inasmuch as such projects are proposed pursuant to an approved MTX Strategic Plan.

- That ERIC direct MTS to reflect expectations for any investment in MTX in its Corporate Plan to be submitted annually for ERIC consideration.

ERIC substantially approved these recommendations.

Since the Minister signed the October, 1985, request, it is unclear whether Crown Investments had the authority to recommend against it.

In our opinion, had MTS/MTX complied with the business planning approach recommended by Crown Investments, many of the concerns set out under the heading of "Business Planning" above, would not have arisen.

IV. MANAGEMENT PROCESSES AND CONTROLS

This section describes the management systems and controls in place within MTX under the headings of

A. PROJECT PLANNING
B. FINANCIAL PLANNING
C. DECISION MAKING
D. MANAGEMENT INFORMATION AND OPERATING CONTROLS
E. FINANCIAL CONTROLS

Where appropriate, deficiencies or concerns regarding the systems and controls are identified.

A. PROJECT PLANNING

At the time of our review, MTX had completed, or was in the process of completing, some 30 projects which it had undertaken since the formation of the company in 1982. Projects are planned and controlled by different people in the organization and are diverse in nature. Furthermore, there are no guidelines available to assist managers in the preparation of a project plan. Consequently, the project planning process shows variation from one project to another.

We reviewed the planning for the US SPRINT project in terms of:

- Definition of deliverables.
- Activity planning and scheduling.
- Task planning and work estimating.
- Staff assignment to tasks.

A detailed commentary on the process is contained in volume III of our report. We found that the definition of project deliverables evolved subsequent to the signing of the contracts. This caused some confusion in the planning and scheduling of project activities. As an example, we found that while milestones had been established for US SPRINT, detailed task plans and work estimates were either not prepared or were prepared relatively late in the project. These deficiencies are significant, particularly as it was unclear whether work could be completed within the price of the contract.

B. FINANCIAL PLANNING

1. Capital

The company was incorporated on January 15, 1982 with an authorized share capital of one million common shares, having a maximum value of $25,000,000. To date, the company has issued 303,201 common shares, for an amount of $7,580,025. The issuance of the company's shares has coincided with a particular need for capital financing, as shown below:

1982			Issued For $	Purpose
January 15	1	Common Share	25	Formation of company
March 18	20,000	Common Shares	500,000	For the cost of making a proposal to Saudi Arabia
May 4	10,000	Common Shares	250,000	For working capital
1983				
March 24	30,000	Common Shares	750,000	For investment in Saudi Arabia Datacom Ltd.
1985				
November 25	243,200	Common Shares	6,080,000	For:Equity in SADL $2,000,000 For:Investment with Cezar Industries $3,400,000 For:Marketing Arrangement with Microtel $ 544,000 For:Project in India $ 136,000
	303,201		7,580,025	

Until the advent of the company's investment in Cezar Industries and the additional $2 million in SADL, the company had been mainly selling small equipment and manpower projects. Accordingly, capital requirements were limited, and, therefore, the $1.5 million in capital stock was sufficient to finance the company's investment in SADL, and provide some working capital.

The company's business plan for the 1985/86 fiscal year, which was finalized in September, 1985, discussed the investment in Cezar Industries, but did not discuss how it was to be funded. The business plan did not deal with the requirement for the additional $2 million investment in SADL.

The minutes of the Board meeting of MTX Directors on September 5, 1985, show that the investments in CIL-INET, ACT and Saudi Arabia were discussed, together with the decision to enter a marketing agreement with Microtel. After some discussion, based on a proposal made by the President of the company, the decision was made to offer 340,000 shares of MTX at a value of $25 per share to MTS. The need for capital investment, as opposed to debt financing was partially explained by the President, who indicated that MTX was suffering from high interest costs associated with short-term financing. The minutes of the meeting do not indicate that any discussion took place relative to the return on the proposed investments or the expected payback period. At the same time, there was no documented discussion about whether equity or debt was the most suitable form of financing for each of these investments.

In 1984, the company had initiated the system of bank drafts for sales of equipment to Telecom and Datacom, divisions of Al Bassam International, the company's partner in SADL. Under this system, receivables from Telecom and Datacom were paid by the Royal Bank or the Bank of Nova Scotia and a bank draft was raised on the respective companies in Saudi Arabia. Almost from inception, this system met with problems, as drafts were rolled over into other drafts maturing at a later date. Drafts payable by Telecom were paid by MTX from June, 1984, through September, 1985. Drafts due from Datacom were paid by MTX from September, 1984, to September, 1985.

The problems associated with the receivables at Datacom were discussed at board meetings of MTX on June 26, 1985, and September 5, 1985. At both of those meetings, the case for increasing the capitalization of SADL was presented. The proposition was approved at the meeting on September 5, 1985. According to the minutes, the rationale for the increase in investment at SADL was as follows:

	$
Initial Investment	
MTX	794,000
Al Bassam	-
Cumulative losses to 31/12/84	(2,450,000)
Excess of losses over investment	1,656,000
Investment in fixed assets	2,900,000
	4,556,000

The total amount shown above was to be financed through an additional $2 million from MTX and a matching amount from Sheikh Al Bassam.

This picture, however, is curious in the light of the financial statements of SADL as at December 31, 1984. In summary, these financial statements show a balance sheet as follows:

	SR	Exchange at 2.78 $
Current Assets	7,847,430	2,822,816
Current Liabilities	7,669,067	2,758,867
Net Current Assets	178,363	64,159
Fixed Assets - net	4,476,509	1,610,255
	4,654,872	1,674,414
Equity		
MTX	2,210,000	794,964
Al Bassam	2,210,000	794,964
Retained Earnings	211,385	76,037
Statutory reserve	23,487	8,449
	4,654,872	1,674,414

Based on the above figures, it would appear that little additional financing was required. Throughout the period from the startup of Datacom, a division of Al Bassam International, through the registration of SADL on June 7, 1983, and the period of refinancing in 1985, the funds of SADL and Datacom have been intermingled. In a memorandum, "MTX Telecom Services Inc. Saudi Organization and Business Relationship, December 31, 1984", the author, D.J. Plunkett states "when we speak of Datacom in MTX, we speak both of Datacom Division and SADL as one entity." He also states "...SADL has executed with Datacom Division a management agreement which provides for the day to day business management of Datacom and the provision of technical expertise in the products that it markets and sells. This management agreement calls for the payment of SR 250,000 per month to SADL. The agreement can be amended at any time by mutual consent. MTX and the Bassams have a working understanding however, wherein they agree to share equally in all profits and losses." (emphasis is ours).

It would appear, therefore, that the figures presented to the Board of MTX were not the figures for the company's investment in SADL. They were, in fact, the combined figures for SADL and Datacom, the latter being a division of Al Bassam International, an operation in which MTX had "a working understanding" to share equally in all profits and losses.

The combined balance sheet of SADL and Datacom as at December 31, 1984, was as follows:

	(000's) SR	Exchange @2.78	$
Current Assets	15,209		5,471
Current Liabilities	25,270		9,090
Net Current Liabilities	10,061		3,619
Other Assets	8,394		3,019
Excess of Liabilities over Assets	1,667		600
Represented by Equity Share Capital	4,420		1,590
Deficit	6,087		2,190
Excess of Deficit over Share Capital	1,667		600

The figures set out in the preceding balance sheet differ somewhat from those presented to the Board.

From the point of view of financial planning, therefore, it would appear that:

- No discussion of the need for additional capitalization of SADL or Datacom was contained in the MTX business plan for 1985/86.
- The Board was asked to advance $2 million to SADL when, in fact, the advance was really required in Datacom, a wholly-owned subsidiary of Al Bassam International.
- The financial information given to the MTX Board on which they based their decision to invest $2 million does not tie in to the financial statements.
- The minutes do not indicate any discussion of the prudence of advancing such additional funds in the light of Datacom and Telecom having failed to meet several of their bank drafts on the due date.

There is one final matter related to the company's financial involvement in Saudi Arabia. The financial statements of MTX as of March 31, 1985, show the investment in Saudi Arabia as follows:

	1985	1984
	$	$
Investment in Capital Stock	794,053	794,053
Less: Loss recorded, using the equity method	113,166	-
	680,887	794,053

Note 2 to the financial statements says, "The recoverability of the investment in SADL and the related trade receivables described above is uncertain at this time. The recovery of these assets is dependent upon the success of future operations of SADL and certain related divisions of the 50% Saudia Arabia shareholder."

While the foregoing is technically correct, insofar as MTX brought into its accounts its share of the 50% loss in SADL, the financial statements do not disclose that there was a working understanding that MTX and Al Bassam would share equally in profits and losses of Datacom. By December 31, 1984, according to the financial information provided above, Datacom had accumulated losses of $2,190,000, of which 50% or $1,095,000 would be MTX's share. By June 30, 1986, cumulative losses in Datacom amounted to SR 18,555,000 or $6,675,000, of which 50% or $3,337,000 would be MTX's share. None of this amount has been recognized in the financial statements of MTX.

At the Board meeting of January 9, 1986, it was disclosed that Sheikh Bassam had paid only $1.4 million of the amount due from him by way of additional capital. It was stated that, therefore, MTX would withhold the balance of its equity investment. This comment is ironic, since the MTX capital was contributed by way of money already due to MTX through the bank draft process, i.e., accounts receivable.

At the same meeting, it was noted that the Sheikh had obtained a one-month extension on the outstanding notes due to Lloyd's Bank. Mr. Provencher advised the Board that, while the risk to MTX was increasing, if Sheikh Bassam did not meet the Lloyd's notes due in mid-January, then the risk would increase dramatically.

- Mr. Holland stated that the existing financial condition of Datacom did not allow MTS to take drastic action. Rather, he stated, MTS must find a methodology to increase Datacom's financial flow. This methodology was not found and accounts receivable from Saudi Arabia subsequently increased to $15.4 million.

2. Operating

Operating budgets were prepared each year, and were attached to the company's annual business plans. In the 1986/87 business plan, the budgets were recast at the Board's request on the basis of Probable Revenues and Speculative Revenues. Prior years' budgets were prepared on only one basis, and did not indicate a range of probable achievement. Furthermore, the budgets did not provide a detailed analysis of cost by project, cost of sales apparently being calculated on the basis of an estimated margin. The operating budget comprised only an income statement. No balance sheet or cash flow projection was prepared. No analysis was made of the timing of sales and, until the 1986/87 plan the budget was not divided into months, to allow for the tracking of actual results against the projections shown in the business plan. Although sales and cost of sales were provided, by project, in the absence of a detailed analysis of cost of sales, a figure which appears to be drawn by an estimate of gross margins, project managers did not have information on costs over which they had control or for which they were responsible. In fact, budgets were not allocated to managers.

The reason given for the situation described in the foregoing paragraph is that the company was in a startup mode, and that it was difficult to foresee how future events might develop. This might have been true of the early years of operation, but MTX has now been in existence for nearly five years, and a more structured approach to the operational budgeting process might be expected. In particular, since the budget was driven primarily by revenue estimates, it was imperative that a more analytical review of market conditions should have been undertaken in order to:

a) Determine the marketability of personnel resources available to the company.

b) Determine the marketability of the company's products.

While some of this analysis was done in the business plan, it tended to take the form of a list of perceived opportunities, rather than being based on a more rigorous analysis of the market place.

For the foregoing reasons, the operational budgeting process did not produce a document that provided much resemblance to actual results, and its value as a management tool was, therefore, very limited.

Since revenues were not broken down into months, it was not possible to forecast cash requirements. The company relied upon MTS to act as its banker, but did not provide information on cash flows to the treasurer of MTS to allow for peak cash demands. Since early in 1985, the main reason for the increase in the inter-company account has been as the result of the default on the Saudi Arabian bank drafts. This situation could probably have been foreseen in the preparation of the 1985/86 business plan, since that document was finally submitted to the Board in September, 1985, but it was not dealt with, and it does not appear to have been addressed in the 1986/87 plan either.

C. DECISION MAKING

The decision making process in MTX was concentrated in the President's office. Strategic decisions, such as the investment in Cezar Industries, would be presented to the Board of MTX for review and approval and, where additional funding was required, at the Board of MTS. Prior to such projects being presented to the Board, they would be discussed in detail with Mr. Glover Anderson in his capacity as Managing Director of the company. There were very few meetings at the executive level in MTX to discuss business decisions. Vice Presidents were assigned to particular projects, and would have very little knowledge about decisions taken regarding projects or functions for which they were not directly responsible.

In January, 1986, the company adopted a new authorization matrix which assigned signing authorities within MTX. This replaced an older matrix which had been in existance since 1982. One of the Vice Presidents whom we interviewed indicated that the January, 1986, matrix, was the first he had seen, which would suggest that the previous matrix was not in general use. There was considerable uncertainty about who had authority for various functions and, accordingly, most authorizations to submit proposals, commit the company, make purchases and pay invoices were made by the President. While adding additional duties to the President's position, this situation became particularly difficult to manage during the President's frequent extended trips overseas. At such times, we were informed that the Vice Presidents were sometimes called upon to sign commitments for matters about which they had little or no knowledge. On occasion, they refused to sign, and documents would be referred to Mr. Glover Anderson for signature. Since the Vice- Presidents had no budgets, they were unclear as to the extent to which they had authority to commit the company.

Because of personnel problems in the accounting department, the company did not have a project accounting system in place. Accordingly, unless they prepared their own accounting records, project managers would have no information about project costs incurred. This made the financial control of projects very difficult to achieve.

None of the Vice Presidents or project managers has a job description. There is no process in place within MTX for the setting of individual goals and objectives for managers. Accordingly, managers are required to make decisions without assurance that those decisions are within their area of responsibility.

The prerequisites for good decision making are:

- A clear delineation of roles and responsibilities.

- A clear delineation of authorization levels.
- Accurate and timely information about project progress and project costs.

We did not find that these prerequisites were apparent at MTX.

D. MANAGEMENT INFORMATION AND OPERATING CONTROLS

Throughout its existence, the main project with which MTX has been involved is the Saudi venture. This venture has suffered from significant problems relative to management information and operating controls. In a letter to the company on October 28, 1985, Arthur Andersen & Co. reported that:

- It was difficult to obtain information from Saudi Arabia on a timely basis.
- The communication and documenting of transactions with Saudi Arabia by accounting staff was often not adequate.
- The books and records of SADL are to be kept in Arabic; this was not done.
- The inventory control system used by SADL was not adequate in light of the company's scope of operations. For example, inventory was being returned during the year to SADL, but was not properly accounted for and, therefore, understated the inventory.

- Inefficiencies in SADL operations were apparent to MTX management, once the SADL overhead expenses were more closely reviewed.

- A separate set of records for SADL sales was not maintained during the year. Sales of SADL and Datacom (a division of Al-Bassam International Company) were maintained on a combined basis and adjusted at year end.

Arthur Andersen said that steps to obtain and provide complete, accurate and timely information were essential to management and the Board of Directors to enable them to make informed business decisions.

MTX did subsequently put some procedures in place which improved the quality of the accounting and the timeliness of financial information from Saudi Arabia.

Apart from Saudi Arabia, MTX has had other problems with the production of management information. In his overview letter for the audit of MTX to the Minister responsible for Manitoba Telephone System, dated May 28, 1985, the Provincial Auditor said.

> "Financial Reporting
>
> Financial reporting of the results of operations on a monthly basis has not yet been achieved. Such reporting is essential to maintaining effective control of operations. We recommended that the goal of monthly reporting on a timely basis be actively pursued. This should be based on books of account that are maintained in a current, accurate condition. The reports should

> also incorporate comparisons to the budgets to be developed as discussed in item II.2.
>
> We understand that the books of account have been brought up to December 31, 1984, and that the new accountant on staff has been assigned the task of keeping these records current and producing monthly financial statements."

As a result of inadequate budgeting procedures and lack of timely financial information, adequate control of operations was difficult to achieve. The extent to which it was achieved was as a result of the President's hands-on style. This situation was commented upon by MTS internal audit in 1985, who found that the strength of the MTX day to day operations rested essentially with one key person - its President. He decided what invoices would be drafted, the development charges to be deferred or assigned to future projects, and issued the financial statements. Also, he was responsible for the more mundane aspects of the business, such as implementation of procedures and controls.

The internal audit report went on to state that, in MTX's infancy, this heavy reliance on one person and an absence of too much business formality was probably prudent. However, it resulted in considerable data being stored in one person's mind rather than being properly documented, the tardy preparation and issuance of financial reports, procedures being verbal rather than formal, etc. From an audit point of view, internal audit found this situation to be rather disconcerting since so much of the information that was needed was not readily available or discernible.

It was noted by internal audit that the staff addition of a business manager and an accountant should relieve the

President from much of the detailed work and day-to-day responsibilities. Also, planned action re timely issuing of financial reports, drawing down of drafts, implementing controls and developing formal procedures should result in a more vibrant and viable operation.

A business manager was appointed, but left in 1986 for health-related reasons. Regular financial information was not available on an overall basis; neither was it available on a project basis, unless the project manager operated his own system. As a result, projects were reviewed by means of subjective gauging to assess adherence to contracts. As the milestones built into each project plan did not contain cost estimates, it was not possible to determine cost overruns at various points during the project. Subjective measurements were that MTX would "meet its obligations as to the satisfaction of its customers and to specifications," and that "money was coming in." This situation did not provide an adequate management information system, and was probably caused as the result of the company's inability to retain competent accounting staff, as described below.

E. FINANCIAL CONTROLS

In the earlier years of its existence, the accounting for MTX was carried out on its behalf by MTS. In 1984, the company began to operate its own accounting system, and hired a fifth year RIA student as accountant. The company has since been beset with problems of maintaining adequate financial controls, stemming from its inability to retain its accounting personnel. The company has been subject to several audits by its statutory auditor, Arthur Andersen & Co., and was also subject to an audit conducted by the MTS internal audit department. These audits identified a series of inadequacies in the company's system of financial control. These included:

- Failure to bill for services on a timely basis.
- Poor collection of receivables.
- Delays in the collection of bank drafts.
- Failure to charge interest on overdue accounts.
- Questions as to the allocation of certain costs to the category.
- Errors on sales invoices.
- Payments made on the basis of documentation other than original supplier invoice,
- Payments made without matching receiving orders, supplier invoices and purchase orders.
- Discrepancies between amounts shown on purchase orders and final invoices.
- Certain employee advances outstanding for more than one year.

In his response to the internal audit report, Wayne Wilson, Vice President of Operations, said in March, 1986:

"Regular accounting methods and procedures development have been hampered and delayed by staff turnover. In January of 1985, an accountant was hired; after experiencing a sharp

> learning curve and starting to become productive, he left our employ. Replacement did not occur until September 23, 1985 which again will require another learning curve before full production can be expected. We are now confident that most of the concerns listed in your report will be addressed but point out that in a small organization such as MTX each individual plays a key role in his or her particular discipline and any staff turnover causes major administrative disruptions in the timely flow of information, let alone the day to day functional requirements."

The replacement accountant referred to in Mr. Wilson's memorandum left in April, 1986.

In our opinion, this was not surprising, since the company did not put sufficient emphasis on the importance of this position, and tended to hire at too junior a level. Furthermore, the accounting function at the time reported to the Vice-President of Operations, a person with a background in personnel, and no training in accounting matters. This would not have provided a good basis for the development of accounting skills.

Ultimately, a member of the MTS internal audit group was transferred to MTX as accountant during the summer of 1986. Accordingly, many of the matters referred to in the statutory and internal auditors' reports have only recently been addressed.

V. HUMAN RESOURCES MANAGEMENT

An overall review was made of the human resource management processes within MTX. This included recruitment and selection, manpower planning and development and compensation.

A. RECRUITMENT AND SELECTION

MTX is unique from most organizations in that it recruits most of its resources from the parent corporation, many of which are only seconded for particular projects. Hence, in the recruitment process, there is often a joint responsibility between MTS and MTX. Selection is purely the responsibility of MTX. Within this context, we have identified a number of shortcomings.

1. Position Requirements Often Not Defined

Position requirements were mostly poorly defined or analyzed at the professional and management levels, yet better performed at more junior technical positions. Failure to do a good job of determining the key skills and attributes required for a position substantially weakens the basis for identifying and selecting appropriate staff resources. This lack has been noted previously regarding the position of President. There also appeared to be no position analysis for either of the Vice-President positions or other senior staff at MTX.

The most serious result of failing to perform significant position requirement analysis is the lack of critical and objective analyses of the degree to which MTS can supply the right type of resources for

MTX's requirements. The nature of MTX's business differs significantly from the utility business of MTS in terms of markets, functions and business environment. Outside of clerical positions, only three positions are staffed external to MTS. One of these, the President came from elsewhere in the government. From our review, we would judge that MTX might benefit from a better balance between MTS and external resources, at least until there has been longer period for MTS/MTX to acquire the business acumen and functional capability to operate successfully in a new business environment.

2. MTS Management and Personnel Function Is Sometimes Bypassed

Interviews indicated that MTX management sometimes bypassed the MTS Personnel Department and MTS managers in securing staff by going directly to MTS employees for proposal activity or projects. The MTS Personnel Department, in expressing concern, was informed by senior MTS management that they should tolerate this because "golden opportunities should not be lost".

3. MTX Staffing Strategy Created Impermanence

The staffing strategy for MTX created a sense of impermanence. MTX employees are generally either on a contract for a stated period, on a reassignment to MTX with an expected return to MTS, on or loan to MTX for only a specific project. This tends not to create any strong identity with the MTX organization or a long-term view respecting career orientation and development within the MTX environment. This, in turn, must affect the view of MTX management respecting the growth and development of their resources.

B. COMPENSATION PRACTICES

To some extent, compensation practices reflect the short-term horizons created by MTX's staffing strategy. As a result, they have tended to be customized to secure particular individuals through secondment or contract. Our key findings are:

1. Lack of Compensation Policy

There is no compensation policy. As indicated, compensation arrangement have been individualized, with some rough guidelines used for transferring employees.

2. No Basis for Internal or External Equity

Generally, company compensation programs are designed to provide equitable remuneration based on the relative worth of positions compared internally and to the external market place. Although most "core" positions of MTX are substantially different than positions in MTS, MTX has taken no steps to value the worth of positions externally. Generally, transferees to MTX come on a lateral move with no salary change or with a one step increment to base salary - approximately $1,500 per annum. Transferees are advised that, on return to MTS, they will revert to their original salary. Hence, salaries at MTX are more a function of the salary paid to the incumbent in his previous position than the scope and responsibility of his new position in MTX.

3. Little Consistency in Bonuses and Incentive Payments

Some employees have formed arrangements for bonuses and incentives. For instance, the U.S. SPRINT project managers are paid pre-agreed sums for the achievement of project milestones. Contract employees, such as Mike Bramwell, V.P. Marketing, receive incentive payments based on gross sales. Some others have informally received a lump sum cost bonus equivalent to a one step salary increment. There does not appear to be any fully consistent approach as to who should be eligible for bonuses and incentives.

There is also some evidence that the incentive systems may be poorly structured. For instance, in the case of Mike Bramwell, his incentive is based on gross sales. However, in reviewing his responsibilities, he appears to have substantial project profit accountability. It could well be that MTX could lose substantial money on the U.S. SPRINT and similar projects, and Mike Bramwell could be rewarded well, based on sales levels alone.

The MTX President indicated that the company had recognized weaknesses in its compensation practices and had planned to undertake a review of these this past summer.

C. MANPOWER PLANNING AND DEVELOPMENT

Manpower planning and development are the processes for determining the type and amount of manpower resources which will be required to meet the organization's plans and for the training and development of current and planned resources.

1. Manpower Planning is Limited

Manpower planning has been limited to the extent of calculating, overall, the likely man years of support which might be required of MTS to support particular product initiatives of MTX. Little seems to have been done to translate these broad estimates into more precise, actionable requirements that could then be agreed on between MTS and MTX, and allow MTS to manage its support to MTX in an effective manner. MTX's difficulties in securing personnel from MTS stem, in part, from this lack of planning. For instance, documents indicate that Northern Telecom manpower contracts could not be serviced to the level of budgeted activity because of lack of MTS resources. It should be understood, however, that the very nature of MTX's business will make many manpower requirements somewhat unpredictable.

2. Limited Performance Review and Development

MTX employees interviewed indicated that their performance at MTX had not been formally reviewed. This has not permitted:

- assessment of the degree to which MTX is meeting its mission statement of providing employee challenge and job enrichment, or

- identification and management of critical areas for employee development.

MTX has recognized the need to improve the selling skills of some employees, and planned programs to that end. A critical weakness is the lack of training provided to MTS employees in project estimating and management for MTX type projects.

Overall, the human resource management in MTX has been somewhat ad hoc and has not been directed toward the effective deployment of MTS resources and the development of longer-term MTX staff resources.

VI. ASSESSMENT OF MANAGEMENT PERSONNEL

Our examination has revealed serious deficiencies in management decision making and the organization and control of MTX and its various ventures. Senior executives responsible for MTS and MTX must accept ultimate responsibility for exposing the Corporation to significant business risk and financial losses. We have not been able to determine the full extent of the losses incurred. However, we expect they will be substantial and could be in the range of $20 to $25 million Cdn. Messrs. Gordon Holland, Glover Anderson and Maurice Provencher initiated these ventures and were responsible for their results since the start up of MTX in 1982. The organization, staffing and investment proposals were begun under their direction. The Boards of Directors of MTS and MTX relied upon them as the key management executives to exercise sound business judgment and to direct and control these ventures, as approved. Sound financial and management control was not established from the very start of operations. In addition, the Corporations' (MTX and MTS) assets were placed inappropriately at risk by the business and contractual arrangements utilized for these ventures. In particular, the structure and business arrangements for the CEZAR/INET venture showed poor business judgement. At various times, there was evidence of serious problems. These individuals failed to take appropriate corrective action and to adequately communicate these difficulties.

As President and Chief Operating Officer of MTX since 1984, Mr. Donald Plunkett has worked diligently to develop MTX and deal with its problems. However, the company has lacked adequate management resources and financial controls from its beginning. He has failed to deal with these critical needs. In addition, he initiated the venture with US SPRINT and CEZAR. Poor business judgement was displayed in the structuring and management of these activities. The organizational structure and management accountabilities within MTX remain inadequate. The losses and problems within MTX have been prolonged by his failure to take corrective action.

Mr. M.A. Aysan undertook the detailed field research and planning for the Saudi Arabia partnership with Sheikh Al Bassam. At the insistance of the Sheikh, he was appointed General Manager of SADL for three years after the start up of operations in 1982. He endeavoured to return to Canada in the mid-term of his appointment. However, he was persuaded to complete his term of appointment and proceeded to do so. He was hard-working in fulfilling his mandate. However, there is evidence of poor judgement in the content of business plans prepared for consideration by the Boards of SADL. These plans were not approved by the Board of Directors of MTS and MTX. The decision to shift the business of data communications to micro-computer products was inappropriate. The staffing of SADL was focused on providing technical resources rather than on marketing and selling capabilities. Many of the serious financing and business problems which have become evident in 1986 were initiated during Mr. Aysan's tenure as General Manager.

In summary, the company had inadequate management resources and leadership throughout the period from its start up of operations, in 1982, to date.

VII. CONCLUSION

Many of the deficiencies which we identified are understandable in an immature organization in a start up mode, and particularly in a business environment which is distinctly different from the one in which the organization's management received their training.

However, the lack of an adequate strategic focus, i.e. "What business are we in?," the unstructured organizational arrangements, and the lack of adequate project planning and management information systems are critical weaknesses which should have been addressed. Furthermore, during its three-year history, as MTX evolved and major contracts were secured, the appropriate corrective measures were not put into place.

MTX

ORGANIZATION AND MANAGEMENT CONTROLS

LIST OF INDIVIDUALS INTERVIEWED

TITLE

Laura M. Talbot-Allen	Treasurer	MTS
Glover Anderson	Executive Vice-President	MTS
George Arbez	Manager - International Operations	MTX
Mike Aysan	Ex General Manager	Datacom
F. Baker	Board Member	MTS/MTX
Cheryl Barker	Accounting	Department of Finance
Mike Bramwell	Vice-President - Marketing	MTS
U. Chaput	Board Chairperson	MTX
P. Choppee	Business Manager	MTS
Cliff Durston	Project Manager - U.S. Sprint	MTX
Jean Edmonds	Chairperson of Board	MTS
Audrey Flood	Board Member	MTS
Barry A. Gordon	Vice-President	MTS
Susy Grissam	Consulting Accountant	MTX
Gordon Holland	President	MTS
Reg Ibison	Marketing Manager	MTS
Bidhu S. Jha	Board Member	MTS
Andrew King	Line 1 - Contract	MTX
Cycelia Lazarowich	Purchasing Coordinator	MTX
R. McGraw	OD Manager	MTS
Jon McGuire	Corporate Secretary	MTS/MTX
Roy McMillan	Board Member	MTS
Alan Mackling	Minister of the Crown	
R. Mankewicz		Ex MTS
Saul Miller	Past Board Chairperson	MTS
J. Milne	Project Manager	MTS
Jack Mutter	Financial Reporting Manager	MTS
Don Orchard	Former Minister of the Crown	
S. Jacquel Paterson	Ex Purchaser	MTS
Oz Pedde		Ex MTS
John Plohman	Minister of the Crown	
Don Plunkett	President	MTX
Ann Postles	Accountant	MTX
Maurice Provencher	Vice-President - Finance	MTS

Harvey Saunders	Marketing Staff Specialist	MTX
Norm Stapon	Manager - External Contracts	MTX
Frank Steip	Product Manager - ACT	MTX
Jim Stewart	Marketing Manager (SMDR) (Station Message Detail Recording)	MTX
Joanne Swayze	Board Member	MTS
Grant Wilson	Deputy Minister	Crown Investments
Wayne Wilson	V.P. Business Operations	MTX
Wayne Worobey	Project Manager	MTX

Volume

6

MANAGEMENT AUDIT OF MTX

VOLUME VI - REVIEW OF THE HUMAN RIGHTS ISSUES

November 12, 1986

Submitted to: MTX MANAGEMENT AUDIT STEERING COMMITTEE

Submitted by: P.A. CUMMING, Q.C.

The
Coopers
& Lybrand
Consulting Group

Management Consultants

REVIEW OF THE HUMAN RIGHTS ISSUES

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I. INTRODUCTION

The Terms of Reference for the Management Audit of MTX by The Coopers & Lybrand Consulting Group include, as part of #1 thereof, the requirement that the review and assessment "will also assess the ability of MTX and SADL to operate in Saudi Arabia in full compliance with human rights legislation and the code of conduct for Manitoba crown corporations". Therefore, this part of the review deals with the human rights issues through the application of The Human Rights Act, C.C.S.M., c. H175, enacted by S.M. 1974, c. 65, as amended. As well, the human rights aspect of the "Code of Business Ethics" of MTS, (and applicable to subsidiaries, including MTX) and the later "MTX Telecom Services Inc. Code of Business Conduct" applicable to MTX and issued in July, 1984, will be examined. The history of MTS's and MTX's hiring practices for employment positions for Manitoba residents in Saudi Arabia is then reviewed. Finally, recommendations are made for future business operations of MTX and other Manitoba Crown Corporations abroad in terms of human rights issues.

II. HISTORY

Manitoba Telephone System (MTS) is engaged in the business of telecommunications in Manitoba, under the authority of the Manitoba Telephone Act, c. T40. As of April 17, 1978, as a result of a large contract between Bell Canada to install a telephone system in Saudi Arabia, MTS agreed to provide consultants to Bell Canada, and over 100 employees of MTS at various times have worked in the Kingdom of Saudi Arabia. Seven or eight MTS employees still work in Saudi Arabia on the Bell contract. MTS later became involved in a second contract, since completed, with the Saudi oil company, ARAMCO, whereby MTS employees did a telecommunications project in ARAMCO's Saudi operation.

A consortium consisting of Bell Canada and the three prairie telephone companies considered submitting a "Spectrum Management Proposal" to Saudi Arabia in 1981. At this time, it was proposed to incorporate a wholly owned subsidiary company of MTS for this participation. With Order-in-Council approval (January 6, 1982) MTX Telecom Services Inc. was incorporated. (MTS Board Minutes, January 18, 1982.)

Saudi Arabia is an Islamic country, with different religious, cultural and legal traditions and customs from those of Canada. This reality gives rise to some questions and criticisms in respect of Canadian corporations (in particular, Crown Corporations) doing business abroad in countries with differing standards on human rights. If the decision is made to do business abroad, then care must be taken to comply with applicable laws at home and abroad. Moreover, beyond legal issues, political and moral considerations should be addressed and taken into account before the decision is made to carry on business abroad. As shall be discussed, Manitoba law applies to MTX in its activities within Manitoba, and Saudi law governs its business operations in Saudi Arabia.

In February, 1982, MTX Telecom Services Inc. (MTX) was incorporated as a wholly owned subsidiary of MTS to conduct the foreign business operations of the overall MTS enterprise. The consortium that included MTX in the Spectrum Management Proposal for Saudi Arabia was unsuccessful in its bid. However, MTX subsequently extended its business operations to Saudi Arabia and elsewhere, which has resulted in its employees moving abroad and carrying on its business activities in various foreign jurisdictions. MTX commenced business operations in Saudi Arabia in 1982. MTX became "the MTS agent outside Manitoba for sales of MTS surplus equipment and MTS developed application software." (August 6, 1985 memo to MTS Board from M.J. Provencher, Director of Finance). Several allegations have been made about the manner in which MTX has carried on its business in that country.

By a contract in April, 1982, between MTX and Al Bassam International Ltd. (ABIL), a joint venture limited liability company in Saudi Arabia (SADL) was created for the purpose of carrying on business in communications services. Pending SADL being formally incorporated and receiving a commercial registration, the business was carried on by ABIL through a 'division' of ABIL, called Datacom. It seems Datacom's operations were commenced about August 18, 1982. MTX employees worked for the division, Datacom, and for the subsequently incorporated joint ventures subsidiary, SADL. As well, the Datacom division of ABIL was, itself, later incorporated as a subsidiary of ABIL. Entry and work visas must be obtained for non-Saudi nationals entering and working in Saudi Arabia.

The problem of employment of Canadians in Saudi Arabia is different from that of the Arab boycott directed against Israel. The Canadian government's policy on the boycott since 1976 has been to deny government support to firms which comply with the provisions of the Arab boycott against Israel. Federal governments have declined to implement anti-boycott legislation. In 1979 the United States' Congress enacted the Export Administration Act (50 App. $ 2409.7 (Supp. 111, 1979), 15 C.F.R. 369.1 et seq. (1982)), which is directed against the Arab boycott of Israel by providing that a U.S. corporation cannot "refuse to do business" due to a boycott imposed by a foreign government. (See Hedwig C. Swanson, "United States Corporations Operating in Saudi Arabia and Laws Affecting Discrimination in Employment:

Which Law Shall Prevail?" (1985) 8 Loy, L.A. Int'l & Comp. L.J. 135 at 140)). In 1978, Ontario enacted the Discriminatory Business Practices Act, R.S.O. 1980, c. 119 dealing with this matter. However, this type of legislation has addressed primarily the issue of boycotts, not the matter of possible discriminatory hiring by an employer due to a foreign nation's general laws or customs which refuse entry to employees of Canadian firms on gender or other grounds. The possible problem of discriminatory hiring in employment in Manitoba because of religion, sex, marital status or ethnic or national origin (the prohibited grounds particularly relevant to the issue at hand) is dealt with adequately by the existing Manitoba Human Rights Act. We shall consider further the Ontario Discriminatory Business Practices Act, infra.

The human rights issues, in terms of legal questions, turn upon the employment process and relationship. MTX employees who work in Saudi Arabia are hired by MTX, largely from MTS. In layman's terms, they are 'seconded', although some become employees of MTX, and are paid by MTX, with employment benefits being conferred by MTX, etc. However, the majority retain their formal employment with MTS insofar as pay and benefits are concerned, although they become employees of MTX in the sense of taking direction as workers. MTX seconds or borrows MTS personnel, MTS charging "MTX the direct labour cost of the personnel, employee benefit costs of 14% and direct travel costs" (Memo August 6, 1985, M.J. Provencher to MTS Board, p.2; letter G.W. Holland to R.M. Silva, Deputy Minister, Manitoba Department of Crown Investments August 28, 1985). The February, 1985, contract between MTS and MTX so provides (article 4). In article 6(d) MTX agreed to pay a monthy administrative expense to MTS for, amongst other things "personnel and accounting services related to payrolls, benefits, superannuation and employee secondments." The contracts of employment with MTX were made in Manitoba, and are governed by Manitoba law. (See I. Christie, Employment Law in Canada, 1979 at 109-113). At the end of the period of working abroad, the employment relationship with MTX ceases, and a full employment relationship is re-established with MTS. Occasionally, employees hired by MTX who go to Saudi Arabia are hired from outside of MTS. All MTX employees, while they are in Saudi Arabia, continue as employees of MTX, but in a practical sense are seconded to SADL or Datacom.

In all cases, MTX is an employer or person in Manitoba who recruits or hires individuals in Manitoba to work for MTX in its business operations in Saudi Arabia.

III. SAUDI ARABIAN LAW

In Canada, there is a separation of church and state, and the law derives from the authority of the state's institutions, either as common law through the courts or as statute law by governments. In contrast, Saudi Arabian law is Islamic law which derives from the word of God as provided in the Qur'an, promulgated by the prophets, and is enforced as much by custom as by government. (See Hedwig C. Swanson, "United States Corporations Operating in Saudi Arabia and Laws Affecting Discrimination in Employment: Which Law Shall Prevail?", (1985) 8 Loy. L.A. Int'l. & Comp. L.J. 135 at 143; see generally, Joseph L. Brand, "Aspects of Saudi Arabian Law and Practice," (1986) 9 Boston College International & Comparative Law Review 1.)

Much of the law of Saudi Arabia is unwritten, few court cases are recorded, and statutory law generally takes the form of proclamations issued by the King of Saudi Arabia and the ministers he appoints. Moreover, Saudi Arabia is governed by the most conservative of the four Sunni schools of Islamic jurisprudence, the Hanbali school.

All foreign companies are subject to Saudi law in respect of their business operations in Saudi Arabia. Although there are many variations and subtleties that must be considered, in general, it can be stated that, from the perspective of Manitoba and Canadian human rights values and norms, the application of Saudi regulations and customs discriminate, in some instances, in employment with respect to both women and Jews. That is, Saudi law and custom result in employment practices within Saudi Arabia that would be in breach of Manitoba human rights law, if the practices took place within Manitoba. Saudi law requires a person to have a particular entry visa to be able to work in Saudi Arabia. The visa applicant must be sponsored by a Saudi-based employer, such as ABIL or SADL. If a visa application is not approved by the Saudi embassy, generally no reasons are stated other than that the applicant's qualifications were not satisfactory.

Saudi law expressly provides that all foreign companies operating in Saudi Arabia are subject to its law ((Royal Decree No. 35 (1964), quoted from Mustafa, "Legal Aspects of Doing Business in Saudi Arabia" in The Middle East - A Legal Update 13, 42 (1978), as cited in Swanson, supra, at 144).

A. SAUDI ARABIAN LAW AND JEWS

Saudi Arabia does not recognize Israel as a separate state, and has promulgated regulations concerning companies doing business with Israel (Swanson, supra, at 144). The position of Saudi Arabia toward Jews cannot be stated with precision. Swanson states that the Saudi government considers that Israel has illegally taken part of the Arab homeland, that Saudi Arabia and Israel are therefore technically at war, and as the Israeli constitution recognizes all Jews as Israeli citizens, all

Jews are considered to be enemy aliens. (Swanson, supra, at 145). This has led, at times, to the exclusion of Jews from Saudi Arabia. However, this restriction was relaxed somewhat in 1975 by a decree that "any foreigner sent to Saudi Arabia in fulfillment of contractual obligations will be welcome" (cited by Swanson, supra at 145). Nevertheless, restrictions persist, and refusals are often made in respect of visa requests by foreigners who are Jewish, particularly when passports indicate that the visa applicant has travelled previously to Israel (Swanson, supra at 145). The Saudi application form for a visa allowing the applicant to work in Saudi Arabia solicits answers to questions as to religious beliefs, political affiliations, and whether one has travelled to Israel. In sum, Saudi Arabia's official position is that it does not deny visas on religious grounds, and therefore, does not discriminate against Jews, but only denies visas to Zionists. However, in practice, Saudi Arabia often blurs that distinction so that, in reality, there is discrimination in employment against Jews.

B. SAUDI ARABIAN LAW AND WOMEN

Islamic law is based upon the concept of the Shari'a, or "totality of God's commandments... which governs all aspects of everyday life." (Swanson, supra, at 143). Commentators differ in interpretation of the precepts of the Qur'an as they apply to women, but Saudi regulations in 1979 (with the resurgence of religious fundamentalism) provide "that Saudi women cannot travel alone, work with men, work with non-Muslim foreigners, dress immodestly, wear crosses openly, or hold hands in public" (Swanson, supra, at 145, 146). Only a limited range of occupations are open to women, in the main being teaching and nursing. Saudi tradition and practice reserves most occupations for males. Canadian women have been employed in Saudi Arabia as doctors, teachers, nurses, physiotherapists, stewardesses and administrators. However, Saudi Arabian customs do not approve of women being on their own, so that there is also discrimination in the hiring of single, divorced, separated, or widowed women. Generally, only a married woman accompanied by her spouse would be acceptable in a visa application. Thus, there is also discrimination on the grounds of "marital status" from the standpoint of Manitoba human rights values and norms.

IV. ISSUES ARISING FROM THE SAUDI ARABIAN BUSINESS VENTURES

(1) What is the applicable Canadian and Manitoba human rights law in the instant, and like, situations?

(2) When do Canadian and Manitoba human rights laws apply and what is the limit of the reach of domestic legislation?

(3) Were there breaches of applicable Canadian and Manitoba human rights law in the recruitment and hiring of employees for the MTX business operations carried on in Saudi Arabia?

(4) Were the MTS/MTX codes of business conduct complied with insofar as human rights issues are concerned in the Saudi Arabia business operations?

(5) Are the MTS/MTX codes of business conduct adequate in human rights matters, and are there suggestions or recommendations for improvement? What range of choices is available for a Manitoba Crown Corporation like MTX in moving abroad in respect of human rights issues, what factors come into play in determining choices, and what is the optimal framework for decision-making in this regard?

A. ANSWERING THE ISSUES

(1) What is the applicable Canadian and Manitoba human rights law in the instant, and like, situations?

Does the Canadian Human Rights Act or Manitoba Human Rights Act apply? By letter dated July 23, 1986, Premier Howard Pawley requested the Canadian Human Rights Commission to review the allegation "that MTX is discriminating against women and Jewish persons in the selection of individuals for employment in Saudi Arabia..." Given the federal government's constitutional power over 'telecommunications' as a federal work, undertaking or business that is within the legislative authority of Parliament, since the telephone system connects the province with other provinces, it is understandable that the request for a review of human rights issues was directed to the federal Commission for it would be the entity to do a review of Bell Canada (as it did in the early 1980's), or other telecommunications businesses operating in Canada. However, MTX is a separate corporate entity from MTS, and MTX does not operate a telecommunications business within Canada. Certainly, MTX recruited and hired individuals within Manitoba and this is the subject for review. The Canadian Human Rights Commission takes the view that the operations in Manitoba of MTX are of such a nature that the Manitoba Human Rights Act applies. This seems to be the correct position in respect of the law. As Beetz, J. of the Supreme Court of Canada stated in the Four B Manufacturing case (1979), 102 D.L.R. (3d) 385 at 395, "exclusive provincial legislative competence is the rule" in respect of employment matters unless, by the "functional test of the nature of their operations and their normal activities", the undertakings, services or businesses "can be characterised as federal". As MTX does not carry on a telecommunications business in Canada, its business cannot be described as federal.

It may possibly be argued that the Canadian Human Rights Commission is incorrect in its view of the applicable human rights law. Given that MTX's business is international marketing, the federal Commission possibly might have asserted that the federal human rights law applies because of the trade and commerce power in the Canadian Constitution that gives to Parliament the power to regulate matters relating to international trade and commerce. However, as mentioned, the better view is that the Manitoba Human Rights Act applies.

However, a resolution of the above point is not necessary to deal effectively with the issues at hand, as in substantive content, the Manitoba Human Rights Act is largely the same as the federal Act. There are points of distinction, but they are minor and generally unimportant for our purposes. At the least, either the Manitoba Human Rights Act or the federal Act apply to MTX's activities in Manitoba. As well, both statutes expressly apply to the Crown (section 35 of the Manitoba Act), and servants and agents of the Crown. Thus, the Manitoba Human Rights Act clearly applies to a Crown Corporation like MTX in respect of activities such as the recruitment and hiring process in Manitoba. The pertinent Manitoba Human Rights Act provisions shall now be referred to.

B. THE MANITOBA HUMAN RIGHTS ACT

The particular provisions of the Human Rights Act pertinent in the instant situation are as follows.

Discrimination prohibited in employment

> 6(1) Every person has the right of equality of opportunity based upon bona fide qualifications in respect of his occupation or employment or in respect of training for employment or in respect of an intended occupation, employment, advancement or promotion,...and, without limiting the generality of the foregoing
>
> (a) No employer or person acting on behalf of an employer, shall refuse to employ, or to continue to employ or to train the person for employment or to advance or promote that person, or discriminate against that person in respect of employment or any term or condition of employment;
>
> (b) No employment agency shall refuse to refer a person for employment, or for training for employment,
>
> ... because of race, nationality, religion, colour, sex, age, marital status, physical or mental handicap, ethnic or national origin, or political belief or family status of that person.
>
> Discrimination prohibited in advertising
>
> 6(2) No employer shall publish, display, circulate or broadcast or cause or permit to be published, displayed, circulated or broadcast, any words, symbol or other representation that indicate directly or indirectly that race, nationality, religion, colour, sex, age, marital status, physical or mental handicap, ethnic or national origin, or political belief or family status is or may be a limitation, specification or preference for a position of employment.

Discrimination prohibited in advertising on behalf of an employer

6(3) No person shall publish, display, circulate or broadcast or cause or permit to be published, displayed, circulated or broadcast any advertisement for a position of employment for or on behalf of an employer

(a) that contains any words, symbol, or other representation; or

(b) that is under a classification or heading;

indicating directly or indirectly that race, nationality, religion, colour, sex, age, marital status, physical or mental handicap, ethnic or national origin, or political belief or family status is or may be a limitation, specification or preference for the position of employment.

Pre-employment inquiries

6(4) No person shall use or circulate any form of application for employment or make any written or oral inquiry that expresses either directly or indirectly any limitation, specification or preference as to race, nationality, religion, colour, sex, age, marital status, physical or mental handicap, ethnic or national origin, or political belief or family status of any person or that requires an applicant for employment to furnish any information concerning those particulars.

Employment agencies

6(5) No employment agency shall discriminate against any person because of race, nationality, religion, colour, sex, age, marital status, physical or mental handicap, ethnic or national origin, or political belief or family status in receiving, classifying, disposing of or otherwise acting upon applications for its service or in referring an applicant for employment to an employer or anyone acting on behalf of the employer.

On the evidence, MTX (rather than MTS) is the employer of the persons it recruits to work for SADL and Datacom within the meaning of subsections 6(1) and 6(2) of the Act, but even if it were not (i.e., SADL or Datacom is, or was to be made, the employer) MTX's activities fall within the ambit of subsections 6(3), and 6(4) and 6(5). At the least, MTX is a person that caused to be posted, displayed and circulated advertisements for positions of employment (subsection 6(3)), and circulated forms of application and conducted interviews (subsection 6(4)). If MTX did any act in the recruitment process that violated subsections 6(3) or 6(4), these provisions would apply even if MTX were not the employer (that is, if MTS remained the employer) of those persons it sends to SADL's and Datacom's operations in Saudi Arabia. As well, the Act's definition in paragraph 1(d) for "employment agency" is broad, including "a person who undertakes with or without compensation to procure employees... (or) to procure employment for persons". Thus, subsection 6(5) also applies to MTX.

MTX must meet all the stipulations of the Act generally, and in particular, the cited provisions of section 6, in obtaining employees to work in Saudi Arabia.

(2) When do Canadian and Manitoba human rights laws apply and what is the limit of the reach of domestic legislation?

Every aspect and each stage of the employment process that takes place in Manitoba is subject to applicable Manitoba law, including the provisions of the Human Rights Act. Thus, for example, the solicitation of applicants for positions, the initial screening of applicants, the interviewing by the selection committee of applicants and its making of recommendations, and the decision by management to offer a position to a specific person, must comply with the human rights legislation.

Then (hypothetically, at this point of the discussion), if MTX (or anyone on its behalf) were to discriminate against an individual in the hiring process on any of the thirteen prohibited grounds of the Human Rights Act, there would be a breach of the Act. To comply with the law, every employer, employment agency, or any person within the meaning of section 6 otherwise recruiting or hiring, has an obligation to comply with all of the requirements of section 6 in every aspect at every stage in the hiring process.

For example, if MTX intends to send the person employed to a country that discriminates against a female in terms of that employment position (say the country will not, whether by its law, practice or customs, accept a female in that position of employment) and knowing this, MTX in any way denies a female applicant equal consideration on the merits because the applicant is a female, then MTX is (depending on the precise factual circumstances as to the manner of discrimination) in breach of one or more of subsections 6(1) (2) (3) (4) or (5) of the Act, unless MTX can bring itself within one of the specific exceptions set forth in the Act.

If MTX acted on the assumption (correct or otherwise) that the foreign jurisdiction excluded females, or even just preferred males for employment positions, and MTX discriminated against females in the hiring process, then MTX would prima facie be in breach of section 6. The point is, neither MTX nor any other person can discriminate in Manitoba on a prohibited ground in the hiring process or otherwise in employment. However, there remains to be discussed possible defences to conduct that is otherwise in breach of section 6.

a) Exceptions in The Human Rights Act

Various exceptions are allowed in the Act, in particular, by subsection 6(6) for the purposes of our consideration, which reads:

> Exception
>
> 6(6) The provisions of this section relating to any discrimination, limitation, specification or preference for a position or employment based on sex, age, marital status, family status, physical or mental handicap, or political belief, do not apply, where
>
> (a) sex, age, marital status, family status, or political belief, is a reasonable occupational qualification...

Continuing with the hypothetical situation, it is not an easy question to answer as to whether an employer like MTX can argue that, as only a male applicant is allowed to do the job in the jurisdiction that is to be the location of employment given the laws or customs of that jurisdiction, this then justifies so far as the law is concerned considering only male applicants on the basis of such limitation being a "... reasonable occupational qualification." As we shall see, the Ontario and Canadian Human Rights Commissions each take a different view on this point.

If the employer is discriminating, simply because of the perceived attitudes (as compared to the law) within the foreign jurisdiction itself, such discrimination arguably does not constitute an exception within the meaning of subsection 6(6). There are many decisions in Canada which have held that it is not a defence to say that one discriminated, as a matter of business or economic advantage or necessity, to meet the wishes of other persons in Canada, such as customers, tenants or employees. See, for example, P.G. du Quebec c. Service de Taxis Nord Est (1979) Inc., 1986 C.H.R.R. D/3112 (Quebec Sup. Ct.); G.L. Scott v. Foster Wheeler Limited, 1985, C.H.R.R. (Ontario Board of Inquiry). More generally put, one cannot break the law because another person wants or encourages the transgressor to do so. Any other approach of the law would tend to defeat the public policy objectives in human rights legislation. It would be absurd for the law to allow a defence for factors which go directly contrary to the public policy that the law is seeking to put into effect. Paragraphs 13(a) and (e) of the Manitoba Human Rights Act refer to the underlying public policy as being "...to forward the principle that every person is free and equal in dignity and rights..." and "to further the principle of equality of opportunities and equality in the exercise of civil and legal rights..." It is submitted that the above approach holds true even though the transgressor is in breach of the human rights law in Canada to please the preference of a foreign customer.

It is instructive to refer to analogous United States law. U.S. corporations operating abroad are subject to different federal and state laws which forbid discrimination in employment, including Title VII of the Civil Rights Act (42 U.S.C. s.2000e et seq. (1982)) which has a "bona fide occupational qualification" (called "BFOQ") exception.

Indeed, U.S. citizens working abroad are covered by U.S. anti-discrimination laws, specifically Title VII, while abroad (see, for example, Love v. Pullman Co., 13 Fair Empl. Prac. Cas. (BNA) 423 (D. Colo. 1976), in which American train porters working on trains passing through Canada were deemed entitled to Title VII protection. (See Swanson, supra 135 at 137, 138). It is questionable whether the Canadian Human Rights Act has a similar extraterritorial reach. That is, for example, if a Canadian employer discriminated against a Canadian employee in Saudi Arabia in a manner that had nothing to do with Saudi laws or customs, might the employee be able to lay a complaint under the Canadian Human Rights Act? However, for the situation at hand, this moot point is not of importance because the activities of MTX at issue relate to recruitment hiring and employment practices in Manitoba.

To return to the issue of a possible "reasonable occupational qualification" defence by subsection 6(6) of the Manitoba Act (or an analogous defence under Title VII), the American case of Fernandez v. Wyman Oil Co. (653 F. 2d 1273 (9th Cir. 1981) is pertinent. (See generally, "The Biases of Customers in a Host Country as a Bona Fide Occupational Qualification: Fernandez v. Wynn Oil Co." (1984) 57 Southern California Law Review 335).

The plaintiff, Fernandez, alleged that she was refused a promotion because the defendant corporation's South American clients would refuse to deal with a female in that corporate position. The court stated that "stereotypic impressions of male and female roles do not qualify gender as a BFOQ" (cited in Swanson, supra at 151). Thus, sex discrimination based upon the perceived needs of foreign customers or "stereotypic impressions of male and female roles" would not come within the BFOQ defence within Title VII, nor within subsection 6(6) of the Manitoba Act.

What if the law, rather than merely the attitudes, of the foreign jurisdiction says that a female cannot be employed in the position? The law of the place of employment jurisdiction governs employment in that locale.

Saudi Arabian "dictates against women in business are the result of law, not simply stereotypic...(which) law is based on segregation of men and women, not on a perceived inability of women to excel in business" (Swanson, supra at 152).

As MTX must honor Saudi law when operating in Saudi Arabia, but must follow Manitoba law while recruiting employees in Manitoba, MTX must recruit women for Saudi-based positions as they normally would for Manitoba-based positions, that is, without discrimination. However, MTX would be allowed to tell the prospective female employee that Saudi law is applied within Saudi Arabia and being able to work there includes "segregation of single women from male co-workers in social situations" (Swanson, supra at 152) and the other strictures applicable to women in Saudi society.

Does the Manitoba Act provide a defence, via subsection 6(6), to an employer like MTX in Manitoba when Saudi law means that a female will not receive a visa? Some people will say - what is the reason to require the employer to be non-discriminatory, when the certain result of the process will be the denial of a visa and, therefore, a denial of employment? A court might hold that the exception of subsection 6(6) applies in such a situation, but this is doubtful. The better view is that the law of a foreign jurisdiction cannot be used to excuse what would otherwise be an unlawful act in Manitoba, i.e., the denial of an offer of employment because of the gender of the applicant. Human rights represent core, basic values of a society. Human rights are fragile and it is important that any society does what it can to protect and enhance them. Foreign preferences should not dictate what happens within Manitoba, even though foreign preferences ultimately may determine whether or not employment decisions made within Manitoba can be made operative because the intended employee cannot obtain a visa to move abroad.

The Ontario Human Rights Commission's experience with respect to the recruitment of Ontario residents for positions in Saudi Arabia is instructive. A complaint by a person of the Jewish faith that an application form of a Saudi embassy agency soliciting applicants in Canada required the applicant to state his religion when applying for a teacher's position, was dismissed by the Ontario Human Rights Commission because of the defence of diplomatic immunity. (The Vienna Convention on Diplomatic Relations, which is incorporated into Canadian law by the Diplomatic and Consular Privileges and Immunities Act, S.C. 1976-77, vol.1, c.31.) The point is, the example illustrates how people are offended and hurt by discriminatory solicitations and advertisements. To have someone offend our core values and rights within Canada, even though it is for the purpose of obtaining employees in a foreign jurisdiction such as Saudi Arabia where such discrimination is the Saudi norm pursuant to Saudi law, is offensive to Canadians.

The Ontario Human Rights Commission refuses requests for exemption from the application of human rights law by newspapers and employment agencies in respect of recruitment of employees' advertisements on behalf of the above mentioned agency of the Saudi embassy. The Commission's view is that it should not be seen to condone or approve practices which are unlawful discrimination, even though the human rights law is unenforceable due to diplomatic immunity. The Commission does allow the Saudi agency to use relatively inoffensive words in advertisements to the effect that applications may be evaluated with respect to the cultural requirements of Saudi Arabia. The Commission does not want foreign jurisdictions to publicize and import their human rights biases into the province. Just as Canadians must not export their biases, the Saudis must not import theirs into Canada. The Commission feels that the integrity of Canadian public policy on human rights must be maintained. Thus, Canadian newspapers and employment agencies must be nondiscriminatory even when their clients are the Saudi government. There is a positive obligation for newspapers and employment agencies to conform to the laws designed to protect and enhance the human rights of the residents of the province.

To act in compliance with the law in Manitoba, MTX must utilize a non-discriminating hiring process which complies with the provisions of the Human Rights Act. Given the recognition that the law (or administrative practice of the government of the foreign jurisdiction in issuing entry visas or work permits) may be to discriminate, the Manitoba employer should make an offer of employment conditional upon being able to obtain a visa or work permit.

If the above approach is followed by an employer like MTX, legal requirements have been met. It is Saudi Arabia which discriminates, not the employer, in denying the entry visa. However, there may be a few situations that arise where an employee can obtain a visa from Saudi Arabia, but the employer feels it is necessary to deny the employee the employment opportunity on the basis of a ground prohibited by subsections 6(1) to (5) of the Manitoba Human Rights Act. Can the employer ever bring itself within the exceptions of the Act, particularly when the ground is religion, ethnic or national origin, or sex? Two American cases are illustrative of the problem.

Kern v. Dynalectron Corporation (577 F. Supp. 1196 (N.D. Tex. 1983), aff'd mem., 746F.2d810 (5th Cir. 1984)) involved the clash of United States and Saudi laws in respect of the issue of religious discrimination. Saudi Arabian law requires that non-Muslims be excluded from Mecca on pain of death. Kern was a non-Moslem helicopter pilot who wanted to take up an employment opportunity as a helicopter pilot in performance of the respondent's contract to supply helicopter pilots to help in the prevention and control of fires in the tents of pilgrims going to Mecca. Kern would not be in danger unless forced to land in Mecca itself. Apparently, there was not a problem in obtaining a visa. However, the employer successfully defended an action by Kern that alleged its refusal to hire non-Moslems was religious discrimination under Title VII. The court held that the discrimination was legally based upon a bona fide occupational qualification exception, finding that being a Muslim was "of the essence" for the job to be performed by Kern. The court in a situation like Kern is really addressing the risk or safety factor resulting from religious discrimination by the foreign jurisdiction, rather than simply applying a foreign discriminatory law in the domestic jurisdiction (F. Supp. at 1198; see Swanson, supra at 146.) Given the risk of injury, it would seem that the employer's restriction in a Kern type situation in Canada would similarly constitute a bona fide occupational requirement under s.14(a) of the Canadian Human Rights Act. In Ontario Human Rights Commision et al v. The Borough of Etobicoke (1982), 3 C.H.R.R. D/781(S.C.C.), McIntyre, J. stated:

> "To be a bona fide occupational qualification and requirement, a limitation...must be imposed honestly, in good faith and in the sincerely held belief that such limitation is imposed in the interests of the adequate performance of the work involved with all reasonable dispatch, safety and economy and not for ulterior or extraneous reasons aimed at objectives which could defeat the purpose of the Code. In addition, it must be related in an objective sense to the performance of the employment concerned, in that it is reasonably necessary to assure the efficient and economical performance of the job without endangering the employee, his fellow employees and the general public."

The Manitoba case of Loveday v. Baker Manufacturing Limited (1984), 5 C.H.R.R. D/1913 addressed the issue of risk to a handicapped employee. The case is particularly interesting because the complainant had actually being satisfactorily performing his job for two months before he was dismissed because of a previous back injury. The Board found that lifting heavy weights was a bona fide occupational requirement of this particular job.

Subsection 6(10) of the Manitoba Human Rights Act provides that the prohibitions against discrimination because of handicap are inapplicable "where the nature and extent of the handicap reasonably precludes or renders the person incapable of satisfactorily discharging the duties of that position". The Board in Loveday, focussing on the "reasonableness" test of subsection 6(10), found that the complainant was disqualified from the position due to his handicap. His lifting the weights involved for a period of time did not exclude the "possibility and probability" of his seriously injuring his back again if he continued. The employer did not act unreasonably by acting on the medical reports it received, nor could the complainant "reasonably expect to continue on in a position with inherent risks to his physical integrity." (at D/1922). Mr. Loveday's (like Mr. Kern's in Kern) readiness to accept the risk of injury was dismissed as being "unreasonable". See also Manitoba Human Rights Commission and Loveday v. Baker Manufacturing Limited (1984 5 W.W.R. 704 (Man. Q.B.) where the court dismissed an appeal from the Board's decision that a lack of back problems was a b.f.o.r. to warehouse work, finding that "(n)o employee has the right to risk serious injury to himself" (at p. 709).

The Supreme Court of Canada in Etobicoke, supra said that if "there is sufficient risk of employee failure... to warrant (the employer's requirement)... in the interest of safety of the employee...," the bona fide occupational requirement defence has been established. The Supreme Court implied that the same standard should apply, even though it was just the safety of the employee rather than the safety of co-workers, or the public-at-large, that might be put in jeopardy.

Section 14(a) of the federal Act is general in extending the bona fide occupational requirement defence. However, the "reasonable occupational qualification" defence available by subsection 6(6) of the Manitoba Act is restricted to only seven of the thirteen prohibited grounds of discrimination. Specifically, it is not available where the prohibited ground at issue is race, nationality, religion, colour, or ethnic or national origin. Thus, the employer in Kern would not have a defence in Manitoba under subsection 6(6). However, where safety or risks of injury was a *bona fide* concern of the employer, as in *Kern*, the employer in Manitoba could probably argue successfully that the discriminatory requirement to meet safety concerns was a *bona fide* qualification for the position, such that there is no breach of subsection 6(1) of the *Act*, and an excepting provision need not be present.

It seems far fetched to argue, but perhaps a Manitoba employer in the *Kern* situation could also assert that it was effectively acting as an agent for a religious organization, given that Saudis consider the word of God to be the basis of law in Saudi Arabia and that non-Moslems are not allowed to enter Mecca. If the employer could so argue, perhaps subsection 6(7) would be available as a defence (see Swanson, *supra* at 147).

> Exception
>
> 6(7) The provisions of this section relating to a limitation or preference in employment do not apply to an exclusively religious, philanthropic, educational, fraternal or social organization that is not operated for private profit and is operated primarily to foster the welfare of a group or class of persons characterized by a common race, nationality, religion, colour, sex, age, marital status, family status, physical or mental handicap, ethnic or national origin, where, in any such case, one or more of the above enumerated criteria is a bona fide occupational qualification and requirement.

Abrams v. *Baylor College of Medicine* (581 F. Supp. 1570 (S.D. Tex. 1984)) involved the exclusion of Jews from participating in a medical program supplying cardio-vascular trams to Saudi Arabia. The court held there was no bona fide occupational qualification defence available to the employer, Baylor, because Baylor's decision was held to be based upon stereotypical assumptions concerning Saudi attitude toward Jews. Saudi Arabia does sometimes accept Jewish workers on contract to foreign companies, perhaps because Saudi Arabia needs certain skills brought by foreign contract workers, and will therefore sometimes accept Jews simply as citizens of the sending country, while Israelis remain barred. (See Swanson, supra at 149.)

Similarly, in American Jewish Congress v. Carter (190 N.Y. 2d 218 (N.Y. Sup. Ct. 1959), modified, 194 N.Y. 2d 157 (1960) aff'd., 9 N.Y. 2d 60 (1961)) the New York state court, in applying New York antidiscrimination law with a BFOQ provision similar to that seen in the subsequently enacted Title VII, held that Saudia Arabia's preference for a non-Jewish employee was not a BFOQ. As well, the U.S. Equal Employment Opportunity Commission (EEOC) has decided that a domestic employer may not rely upon the foreign country's racial biases to deny an employee of the unfavoured race a foreign assignment (EEOC Dec. No. 72-0697 (1971), EEOC Dec. (CCH) 116317 (1973)).

In summary, the "reasonable occupational qualification" exception is narrowly construed, and is available only in a situation where discrimination is essential, for example, where safety is an issue.

b) Bell Canada And The Canadian Human Rights Commission

It is helpful to review the experience of Bell Canada's hiring practices in respect of Saudi Arabia and complaints under the Canadian Human Rights Act. Although concerns were raised in the late 1970's, no person has made any complaint about not being hired to go to Saudi Arabia on the basis that the person is of the Jewish faith. Accordingly, this issue has never been faced squarely by the Canadian Human Rights Commission.

However, the Canadian Human Rights Commission on its own initiative filed a complaint alleging discrimination on the basis of sex against Bell in respect of hiring policies for contract work in Saudi Arabia. (See Canadian Human Rights Commission Communique of February 11, 1984). The Commission later dismissed its own complaint for the reason that it determined that it is the Saudis who refuse to issue visas to women, because of Saudi law and custom. The Commission is of the view that this "makes being a male a bona fide occupational requirement for work on the contract, beyond Bell's control". That is, the Commission stated that Bell could reject a female applicant at the stage of the hiring decision being made, because a visa rejection was certain. (Communique, *supra*.) Thus, the federal Commission takes an approach more liberal in respect of the *bona fide* occupational requirement defence than that taken by the Ontario Human Rights Commission. In the opinion of the author of this review, the federal approach is incorrect from the standpoint of the law and does not recommend the proper approach for employers to follow. Indeed, Canada's Department of External Affairs requests that Canadian employers submit to the Saudi Arabian embassy visa applications on a non-discriminatory basis of qualified applicants, and that in doing so the employers explain to embassy officials the requirements of Manitoba and Canadian law before the embassy makes its decisions on the visa applicants.

It is to be noted that the federal Commission did, however, forbid Bell from discriminating in employment advertisements and applications. That is, it was only at the point of the screening of applications received that the discrimination could take place.

If the federal Commission is correct in its opinion that while Bell must be non-discriminating in advertising and the application process, yet Bell can make decisions to hire on a discriminatory basis because of sex being a bona fide occupational qualification, then MTX would have a similar argument that it could make decisions to hire for positions in Saudi Arabia based upon the gender of the applicant, using subsection 6(6) of the Manitoba Act as a defence. However, the federal Commission's allowance of the bona fide occupational requirement defence is very questionable, given that the act of discriminatory non-hiring is taking place in Canada, and no issue such as safety is raised.

As has been discussed, the law seems clear that an employer like Bell is not able to discriminate in Canada where it is doing so merely because of foreign custom (rather than law). American courts also (see Abrams v. Baylor College of Medicine, supra) would not allow a "reasonable occupational qualification" defence based upon stereotypical assumptions concerning Saudi attitudes. As discussed, the Ontario Human Rights

Commission has adopted a more stringent approach than the federal one. The preferred approach is the one that the Ontario Commission follows, and the one advocated by External Affairs, being that the employer should not even have to consider asserting a bona fide occupational qualification defence, because the employer is strictly non-discriminatory in its hiring in Canada. The decision as to exclusion of employees on discriminatory criteria will be made solely by the Saudis at the point of the visa application. It is only in the very exceptional situation (such as seen in Kern supra) where, for example, safety of the employee is at issue and there is a possibility the employee may still be able to get a visa that the employer should be able to discriminate in hiring within Canada on the basis of a "reasonable occupational qualification" defence or on the basis that safety makes a discriminatory requirement a bona fide employment qualification such that there is not a breach of subsection 6(1) of the Act. In such instances, the operative factor excusing the employer is safety, not simply the fact of sex discrimination by the Saudis. Although there are no Canadian court decisions directly on point, it is submitted that the correct view is that a Canadian court would not give effect to Saudi law in Canada, by an employer asserting that such foreign law in itself provides the employer with a bona fide employment qualification defence in respect of a hiring decision within Canada that is in breach of domestic human rights legislation.

c) The Ontario Discriminatory Business Practices Act

The United States Export Administration Act and the Ontario Discriminatory Business Practices Act discussed supra were enacted in response to the Arab boycott of Israel. The provisions of such legislation are to a large extent already covered by existing general human rights laws, in the case of Ontario by the Human Rights Code, 1981, S.O. 1982, c. 53. However the specific enactments do reinforce the general human rights legislation and also directly focus upon invidious and insidious boycotts that are contrary to Canadian values, interests, and foreign policy.

If Manitoba had legislation in the nature of the Ontario Discriminatory Business Practives Act, to what extent would it assist beyond the provisions of the Manitoba Human Rights Act in dealing with a situation like the present one, involving MTX?

If Manitoba had this legislation MTX would be, of course, subject to it. Thus, there would be an additional constraint upon discriminatory hiring practices in Manitoba, but this is already dealt with by the Manitoba Human Rights Act. Both laws would apply to business operations within Manitoba.

The real difficulty is in seeking to extend either the Human Rights Act or a Discriminatory Business Practices Act beyond the territorial limits of Manitoba. Obviously, Saudi Arabian law is going to govern what happens within Saudi Arabia and to the extent that Saudi law discriminates, a Manitoba corporation like MTX must not be in breach in its Saudi operations.

Moreover, Saudi Arabia is going to follow its customs and values, as well as its laws, in dealing with visa applications as it sees fit.

The Ontario Human Rights Code, 1981 does contain a provision whereby

> 25(1)It shall be deemed to be a condition of every contract entered into by or on behalf of the Crown or any agency thereof and of every subcontract entered into in the performance thereof that no right under section 4 (which is similar in effect to subsection 6(1) of the Manitoba Act) will be infringed in the course of performing the contract.

However, leaving aside such a provision, the Crown is already bound by human rights statutes (subsection 46(1) of the Ontario Code; section 35 of the Manitoba Act.) Thus, MTX must comply with section 6 of the Manitoba Act and it is doubtful that a subsection 25(1) Ontario Code provision adds anything substantive. As well, provincial legislation cannot have an extra-territorial effect. Saudi Arabia is not bound by a condition deemed to be in a contract by a Manitoba law. Presumably, Saudi Arabia is never going to sign a contract with a Manitoba Crown Corporation whereby the contract is to be governed by Manitoba laws.

Incidentally, it is not meant to suggest above that subsection 25(1) of the Ontario Code attempts to have an extraterritorial effect. Although it may appear to imply this in a literal sense, the phrase "no right under section 4" means that subsection 25(1) is limited to the rights protected by section 4, which rights are those of persons in Ontario, given the territorial limit of Ontario law.

Subsection 25(2) of the Ontario Code states

> It shall be deemed to be a condition of every grant, contribution, loan or guarantee made by or on behalf of the Crown or any agency thereof that no right under section 4 will be infringed in the course of carrying out the purposes for which the grant, contribution, loan or guarantee was made.

The comments applicable to subsection 25(1) are equally applicable to subsection 25(2).

However, if the legal effect of the Ontario provisions is to extend, by contract through conditions deemed to be in contracts by the statutory provisions the "right under section 4" to employment situations beyond Ontario through the words "in the course of performing the contract" (and in respect of subsection 25(2), "in the course of carrying out the purposes for which..."), then the statutory provisions do add something, at least where the questionable hiring practice abroad is not the result of a law in the foreign jurisdiction. To repeat, the provincial legislation cannot displace the law in another jurisdiction, and performance of a contract in that foreign jurisdiction must be in accordance with that law.

In any event, the situation at hand involves discriminatory Saudi law in the case of Canadian female applicants for positions of employment with MTX, and discriminatory practices in the discretionary granting of visas by the Saudi authorities in respect of both women and Jews. Visa granting or denying, and Saudi law, is beyond the control of a Manitoba Crown Corporation. Even if the effect of a section 25

Ontario Code type of provision in Manitoba was to put the Manitoba Crown Corporation technically in breach of its contract or in breach of its conditions of "grant (or) contribution" received from the government, because of the actions of the Saudi government, the Manitoba legislation cannot do anything to remedy the discrimination taking place beyond its borders.

Put briefly, the Manitoba Human Rights Act already regulates MTX within Manitoba in respect of hiring practices. Neither section 25 of the Ontario Human Rights Code, 1981 nor the Ontario Discriminatory Business Practices Act, if enacted as statutory provisions in Manitoba, assist in dealing with the problem of Saudi discriminatory practices through Saudi domestic laws and through visa control.

If the Government of Manitoba wants to control the activities of MTX beyond Manitoba, as it most certainly does, the approach to be taken is through its power as indirect owner, that is, as shareholder, not through laws that seek to have an extraterritorial thrust, but can only be ineffectual.

Having said the above, there is one further point to be made in favour of legislation in the nature of the Ontario Discriminatory Business Practices Act. As mentioned, the primary focus of such legislation is to respond to boycotts imposed by foreign governments. However, the Act does close a potential loophole in the general human rights legislation that may be present by the bona fide occupational qualification exception (see, for example, paragraph 23(b) in the Ontario Human Rights Act, 1981). Prior to passage of the Ontario

Discriminatory Business Practices Act it was theoretically arguable for a corporation to assert a bona fide occupational qualification defence in its discriminatory treatment of Jews for positions of employment in certain countries because the employer's argument would be that the Arab boycott of Israel made this discrimination essential to the operation of the business. In the view of the author of this review, it is doubtful that a Manitoba court would accept an asserted BFOQ defence in support of employment discrimination by an employer within Manitoba in respect of a Jewish applicant for an employment position in Saudi Arabia. Nor, it is submitted, would a Manitoba court accept an asserted BFOQ defence in support of employment discrimination by an employer within Manitoba in respect of a female applicant for an employment position in Saudi Arabia.

Therefore, it is submitted that the BFOQ defence is not available to MTX in respect of its hiring practices within Manitoba in the circumstances under consideration. The Ontario Discriminatory Business Practices Act certainly stands on its own merits as anti-boycott legislation, and it closes the theoretical loophole created by the BFOQ exception. However, it is not necessary to enact such legislation to regulate effectively Crown Corporations within Manitoba in respect of human rights matters. The Manitoba Human Rights Act serves this purpose. As for the activities of Crown Corporations abroad, this is not an issue for Manitoba law, rather, it is an issue for control by government through direction and supervision. This is effectively achieved by government as owner of the entity, not by laws that are ineffectual extraterritorially.

(3) Were there breaches of applicable Canadian and Manitoba human rights law in the recruitment and hiring of employees for the MTX business operations carried on in Saudi Arabia?

A review has been made of the materials gathered in the course of the general Coopers & Lybrand review and assessment of MTX operations. In addition, interviews have been made of senior management of MTS and MTX involved in the recruitment and hiring process, and files and records have been examined. From the interviews undertaken, and the review of MTS and MTX records, the resonable conclusion is that neither MTS nor MTX have been in breach of the Manitoba Human Rights Act in respect of the recruitment of Manitoba-based employees to work for MTX in Saudi Arabia.

Paul Chappee of MTS was interviewed. He supervised the personnel requirements for MTS in respect of the Bell Canada International and ARAMCO contracts. Under these contractual arrangements, MTS employees were seconded to the two projects. However, Bell and ARAMCO did the screening of the applicants, did the interviews, and made the hiring decisions.

Mr. Chappee states that he was aware that female applicants were unlikely to receive visas to work in Saudi Arabia. However, the MTS communications (letters, application forms and posted circulars or notices) were meticulously non-discriminatory in form and content. Moreover, in respect of the resumes received by Mr. Chappee from MTS employees interested in the Bell project, some were from female employees (at least four could be determined from examining MTS records with Mr. Chappee) and these resumes were forwarded by Mr. Chappee to Bell for equal consideration along with the resumes of male appalicants. As already mentioned, Bell did the screening, interviewing, and hiring of applicants.

Although it seems none of the MTS female applicants went to Saudi Arabia to work on the Bell project, the solicitation materials and recruitment process, at least in so far as MTS is concerned, was clearly non-discriminatory. Any allegations of discrimination, if to be made, would be directed at Bell, not MTS.

Gail Wilson worked in personnel with Mr. Chappee in the latter period of time in respect of the Bell and ARAMCO contracts. She was also interviewed at the time of interviewing Mr. Chappee. Ms. Wilson also handled the initial recruiting and personnel needs for MTX as Personnel Coordinator in 1982, and in 1983 moved from MTS to MTX to handle these tasks. It seems four of the initial employees of MTX, including Ian Ferguson, were handpicked by Mike Aysan as key employees. Apart from these initial choices, it seems that positions were generally filled through advertisement circulars ("Management Position Information Bulletins") within MTS. These forms are non-discriminatory in form and content.

Selection committees were formed to assess, screen and interview applicants. If Mike Aysan was in Manitoba at the time of a selection committee interview, he would be a member of the Committee, and his preference would govern the Committee's decision. Ms. Wilson, who would also generally sit on the selection committee, stated that she never heard a reference made on any committee that an applicant of the

Jewish faith or a female would not be acceptable. So far as Ms. Wilson is aware, no person of the Jewish faith applied for an MTX position, and no female applied. As mentioned, the circulars advertising the positions are non-discriminatory in content. Given the absence, so far as is known, of Jewish applicants, and given the absence of female applicants, for MTX positions, it cannot be asserted that the screening or interviewinig of applicants was discriminatory toward persons of the Jewish faith or toward females. Moreover, Mr. Chappee and Ms. Wilson both stated that they are not aware of any person within MTS and MTX complaining at any time that he or she was discriminated against in respect of an application for a position in Saudi Arabia.

Were persons of the Jewish faith and females discouraged from applying for Saudi positions? Again, it is emphasized that the written recruitment circulars were non-discriminatory in form and content. There are no clauses in the executed contracts of MTX that have been reviewed which express or imply unlawful discrimination or which acquiesce to Saudi employment restrictions being applied within Manitoba. However, were there more subtle forms of discouragement by management in respect of persons of the Jewish faith and females? Employees are not labeled by religion and therefore there is some uncertainty about which employees may be Jewish. One certainly gets the impression from the review undertaken that the management of MTX was of the belief it was unlikely the Saudis would accept persons of the Jewish faith and females. It seems apparent that management certainly took no steps to encourage female or Jewish applicants for Saudi postings; however, there is no concrete suggestion that anyone in management actually discouraged such possible applicants.

The solicitation forms for applicants were non-discriminatory in form and content. Saul Miller, former chairperson of the MTS Board, is of the Jewish faith. He was appointed to the MTX Board January 20, 1982. No one is known to have complained to anyone in MTX about being discouraged to apply for an employment position with MTX in Saudi Arabia because that person was of the Jewish faith. As mentioned, the only known female applicants for Saudi positions were in respect of the Bell Canada project and their applications were forwarded by MTS to Bell Canada for equal consideration with the male applicants.

From a review of the general record, one might well have the suspicion that perhaps one or more persons in MTX's management would not in fact have offered a position of employment with MTX to an applicant who is female or is of the Jewish faith, so as not to seem to offend the Saudis by requesting a visa for such applicants, if management had been put to the test of receiving an application for an MTX position in Saudi Arabia from someone who is a female or known to be of the Jewish faith. The general review indicates an excessive entrepreneurial zeal by MTX management in pursuit of the Saudi operations, which makes one suspect that sensitive human rights issues would be given very short shift as a nuisance factor to business goals. This suspicion, coupled with recent comments made by MTX management in the media leave the further suspicion that one or more persons in the MTX management may have at times orally discouraged prospective applicants who are of the Jewish faith or are females. This concern is compounded by the complete absence of Jewish and female employees applying for positions in Saudi Arabia. However, there is no concrete indication of any active discouragement of applications from these groups, and as no known application for an MTX position in Saudi Arabia came forward from a person of either group, and as no complaint is known to have been made to anyone at any time, it is speculative to venture a guess as to what management's reaction to the receipt of an application from someone who is Jewish or female might have been.

It is estimated that there have been about 50 Canadians employed by MTX in Saudi Arabia from 1982 to date. Many of these positions have required considerable technical experience, achieved through a lengthy period of employment with MTS. However, to date there are few women employed by MTS with extensive technical experience, for example, as electrical engineers. Mr. Wayne Wilson of MTX/MTS stated that MTS has engaged in positive efforts to recruit the rerlatively few female engineering graduates available. The relative absence of female employees with extensive technical training and experience is a factor given by MTX/MTS in explaining why there have not been any female applicants for MTX positions in Saudi Arabia.

Wayne Wilson, Manager, Organizational Development, for MTX, stated that while management was aware that the Saudis probably would not grant visas to Jews or women, no one in management took the position that they could not be considered. So far as he is aware, no female or Jewish person applied for a position with MTX, and he states that no one ever complained to him about discrimination.
Mr. Wilson said that he had a concern that, paradoxically, taking formal, visible steps to develop a plan in respect of discrimination for the positions in Saudi Arabia, might be perceived by some people as suggesting discrimination.

Mr. Wilson stressed that MTS has a developing "Equal Employment Opportunity" program whereby it has been actively seeking to recruit female graduate engineers for MTS, and members of minority groups for employment positions generally in MTS.

In summation, on the basis of the interviews conducted and the examination of the corporate records, the reasonable conclusion is that neither MTS nor MTX have been in breach of the Manitoba Human Rights Act in respect of the recruitment of Manitoba-based employees to work for MTS in Saudi Arabia.

(4) Were the MTS/MTX codes of business conduct complied with in so far as human rights issues are concerned in respect of the Saudi Arabia business operations?

Both the earlier MTS Code of Business Ethics and the July 1984 issued MTX Code of Business Conduct are silent about human rights issues as a specific topic. Neither code directly addresses human rights issues. The MTX Code does state that both the laws of Canada and the laws of the foreign jurisdiction shall be complied with. As already discussed, this means that MTX must comply with the Manitoba Human Rights Act in respect of its recruitment and hiring practices in Manitoba, and generally with Saudi law in Saudi Arabia.

As already noted, the reasonable conclusion from the evidence is that Manitoba human rights law has been complied with to date. Thus, the codes of business conduct have been met in respect of compliance with Manitoba human rights law, compliance with the law being the only expressed requirement of the codes. The above comments are suffice to answer the question asked. The comments are limited to human rights requirements as set forth by Manitoba law. However, an additional observation may be appropriate. The evidence does mention that the Matawa, the Saudi enforcement authority in respect of compliance with Saudi Arabian religious customs or laws, administered a caning to at least one Canadian on one occasion because the Matawa considered that the MTX office had remained open during the prayer hour. This incident, and others, raise questions about the general business practices and management of the MTX operations in Saudi Arabia. These questions are dealt with elsewhere in the Coopers & Lybrand report. However, for the purposes of the present discussion, the caning incident is illustrative of the simple but important point that from a legal and practical standpoint, a business operation in Saudi Arabia is subject to that country's laws and customs. Canadians working in Saudi Arabia must respect the different laws and customs of that jurisdiction, just as we insist that the Saudis respect our laws (for example, by our insisting that they not advertise or recruit employees in Canada on a basis of discriminatory criteria). The violation of Saudi law, in so far as it raised legal issues, is solely a matter for Saudi Arabia. From a business standpoint it is wise, of course, to respect and to be seen to respect, that country's laws and religious customs. The business practices in Saudi Arabia of MTX as related by the evidence examined do not violate the Manitoba human rights law. However, the business conduct of MTX in Saudi Arabia may well have been in breach of the code of business conduct for non-human rights issue related reasons.

(5) Are the MTS/MTX codes of business conduct adequate in respect of human rights matters, and are there suggestions or recommendations for improvement? What range of choices

are available for a Manitoba Crown Corporation business like MTX in moving abroad in respect of human rights issues, what factors come into play in determining choices, and what is the optimal framework for decision-making in this regard?

Cabinet approved, on December 19, 1984, on the recommendation of the Economic and Resource Investment Committee (ERIC) a "Crown Corporations Exports Policy" as Provincial Government policy"...to alert the exporting Crown corporations to the concerns and aims of the Government...(with) the guidelines...(being) meant to indicate to the exporting Crown corporations the nature and type of action to be implemented pursuant to the aims of the policy" (submission to ERIC by Minister of Crown Investments, December 13, 1984). The Minutes of ERIC's meeting of December 13, 1984 state that "...after individual corporations have used the policies and reviewed their individual circumstances, if individual corporations' boards feel that particular changes are required, those changes may be brought forward for consideration".

The Crown Corporations Export Policy was sent to Crown corporations, including MTS, by the Minister of Crown Investments on January 11, 1985.

The Policy is intended to provide basic, general guidelines. The Policy is segmented into a "Statement of Exports Policy and Guidelines" with four sub-components, "Business Conduct, Planning, Investment, and Purchasing and Procurement," with a "Background to Exports Policy" subdivided into the same four components, and concludes with "Examples of Policy and Guidelines".

The specific "Guidelines" - Code of Business Conduct" state:

The guidelines will provide Crown corporations with basic rules of business conduct for export activities. From this "common ground" each Crown corporation may expand these guidelines depending upon the extent of their export activity, but as a minimum shall:

1. Act within the laws of the jurisdiction where they are conducting business, and the laws of Canada.

...

6. Establish procedures to ensure compliance with business conduct standards by all officers and employees.

Corporations are encouraged to consider the example statements attached.

The "Example-Exports Code of Business Conduct" provides:

The Corporation values its integrity and, therefore, re-affirms the basic corporate objectives that its business be carried out in compliance with all applicable laws and regulations and in an honest and moral manner. Accordingly, all officers and employees of the Corporation, or of any subsidiaries in which it holds a controlling interest, and where feasible, any corporation where the Corporation holds a significant minority interest, must adhere to the following standards of business conduct:

1. Act within the laws of the jurisdiction where they are conducting business, and the laws of Canada.

    a) The Corporation and its officers and employees shall not, directly or indirectly, take any action in Canada that is not in accordance with the applicable laws in Canada, or take any action outside Canada that violates the law of the place where the transaction occurs, or that, if taken in Canada would be in violation of the applicable Criminal Code in Canada.

    ....

    d) The Corporation will not become involved in any kind of off-shore business without

> consulting Corporate Counsel and retaining, if so advised by Corporate Counsel, the services of reputable legal counsel or other professionals qualified to advise on the impact of the relevant laws in each country where such business is to be conducted.

Paragraphs 1(a) and (d), quoted above, are found in MTX's "Code of Business Conduct" of July, 1984, with insignificant, minor differences in wording. It is noted that the MTX Code predates the Policy. (The wording of the Cabinet Policy is preferred for two reasons - first, it is better written from the standpoint of grammar and syntax, and second, unless there is an explicit reason for departure from the 'model' suggested by Cabinet, it is best that Crown Corporations follow Cabinet Policy exactly in wording).

It is to be noted that paragraph 1(a) is saying that a Crown Corporation doing business abroad shall act in accordance with the laws of Canada in so far as they have force (that is, subject to the territorial limitation of Canadian laws) and within the laws of the foreign jurisdiction where it is conducting business. Put simply, the corporation must act in accordance with the law. Beyond that, the only constraint contained in paragraph 1(a) is that the corporation in conducting its business abroad must also act in accordance with the norms or public policy of Canadian criminal law. The corporation is not required to adhere to the norms of Manitoba human rights law in its activities abroad, nor is it to be constrained in going abroad if the foreign jurisdiction has different human rights values.

In moving a business abroad to a foreign country like Saudi Arabia, a Crown Corporation such as MTX is faced with laws and customs that differ from the values and norms enshrined in Canadian and Manitoba human rights laws. Given these differences, management of the corporation, and the government as shareholder, face complex and difficult issues, from a legal, moral and political standpoint. It is submitted that a code of business conduct should articulate a framework for dealing with such human rights related issues. Three recommendations are made.

First, the code of business conduct should include (following the statement as to requiring general compliance with Canadian and Manitoba law) an explicit statement that the Manitoba Human Rights Act applies to every aspect at every stage of the recruitment and hiring process in Manitoba and generally to all the Manitoba-based operations and activities of the corporation. It should thereby be made clear that any discriminatory laws, customs or practices of the foreign jurisdiction do not compromise the legal requirement of complying fully with the provisions of the Manitoba Human Rights Act in respect of the recruitment and hiring, and all other aspects of the business operations, that take place in Manitoba.

Second, a further paragraph should be added to the code of business conduct that sets up an overt, express framework for management decisions that must be made because of human rights issues that do not involve legal issues, but have moral/political aspects and hence, have ramifications for the business in terms of the success of its venture, for the government politically, and for Manitobans' sense of morality. Specifically, if Saudi Arabia sometimes denies visas to women and persons of the Jewish faith, as it does, which actions violate the values and norms of Manitobans, including those seen in the Manitoba human rights law (but there is no violation of the law itself), what should management and the government do? Such concerns and considerations are of a moral/political rather than legal nature, but nevertheless must be addressed. (See generally "Notes: Civil Rights In Employment And The Multinational Corporations", (1976) 10 Cornell International Law Journal 87).

Canadian corporations doing business abroad are, of course, an important means of facilitating trade, which bring significant economic benefits to Canada and Canadians. For example, the Bell Canada International project in Saudi Arabia has resulted in revenues to Bell of about $2.5 billion to date, and some 2,000 jobs for Canadians.

As well, Canadian businesses moving abroad have a significant impact upon the foreign country. Bell's project has resulted in a seven-fold increase in telephones in Saudi Arabia. The tremendous increase in respect of the communications infrastructure created by Bell within Saudi Arabia will not only serve to assist in the expansion of the Saudi economy, but will also serve to give greater exposure to Saudi customs and values to competing values within and from beyond the country. A modern, comprehensive telecommunications system is a necessary prerequisite to social advancement. Is it more or less likely that Saudi Arabia will change in its views and treatment of women and persons of the Jewish faith (or in its views toward Israel) if Bell or MTX contributes in the building of a communications system? It can be argued that the services that Bell and MTX provide tend to make Saudi Arabia a much more open and less conservative society. It is only since 1970 that Manitoba has made it unlawful to discriminate against sex in employment. Surely this progressive reform of the law was at least in part due to the exposure of

Manitobans through modern telecommunications/ media services to changing values elsewhere in western society.

Is it in the short and long term interest of Canadian foreign policy to have, and even encourage, trade and business relationships between Canadian-based corporations and Saudi Arabia? Clearly, federal governments have adopted this view, and in the Bell Canada International instance actively supported Bell's seeking of the contract.

The point is, a cost/benefits analysis in respect of the moral/political considerations arising because of human rights issues must be made by management, and also by the government when a Crown Corporation is involved, each time the corporation moves abroad in its business operations, just as a costs/benefits analysis must be made in respect of the economic merits.

It is not apropriate, and often self-defeating, to offer the simple answer, as some critics of MTX have suggested, that a corporation should never carry on operations abroad if to do so does not break the law but the foreign country's actions offend the values enshrined in the Manitoba Human Rights Act. That Act is one of the most progressive in Canada. For example, it is unlawful to discriminate in employment because of "political belief". Only Quebec has a similar prohibition. Many countries of the world might discriminate against the employees of a Manitoba corporation doing business abroad, simply because of that employee's expressed political belief. For example, it might well be difficult for a Canadian to engage in free speech in the Republic of China on political matters. Certainly, many countries of the world actively discriminate against their own nationals because of their political beliefs. If MTX were selling

Manitoba wheat to the Soviet Union, and the Soviet Union refused entry to an employee who was a well-known civil rights activist, there would be an outcry, but one suspects few would suggest the wheat should not be sold. The Soviet Union severely transgresses the basic human rights of its Jewish citizens today, but few suggest that because of this Manitoba wheat should not be sold to that country. Is there a meaningful distinction between allowing business to be done with the Soviet Union, and not allowing Manitoba Crown Corporations to carry on a business in Saudi Arabia? The United States' recently refused entry to Farley Mowat because of alleged political beliefs, which act of stupidity was rightly criticized, but no one suggested that we should cease doing business with the United States.

Judgments are called for, and must be made, in dealing with foreign countries. To refuse to do business with all countries that do not mirror our domestic human rights laws would severely limit the ability of Manitoba businesses to carry on their operations abroad. Moreover, it can be argued that the extension of Canadian businesses abroad not only has economic benefits for both countries, but fosters greater mutual understanding through the interchange and offers the stronger possibility that so-called aberrant jurisdictions will change and move toward human rights norms that are more generally acceptable by Canadian standards. Is Saudi Arabia more likely or less likely to be influenced by our values if we cease to do business with that jurisdiction? Incidentally, it may well be that Canadians themselves will gain from exposure to different values abroad. For example, a country like China would be politely critical of a society that allows the phenomenon of bag ladies. France would argue that a modern society should have universally accessible, publicly funded day care, as it does. Australia, until recently, would argue that Canada should not sell uranium to France when that country continues to do nuclear testing in the South Pacific. Examples are endless.

The point simply is, moral/political judgments have to be made, on a costs/benefits basis, in deciding whether or not to carry on business in a foreign country, given its position on human rights. On occasion, governments must make the decision that the violation of human rights in a given foreign country is so offensive and abhorent to Canadian values, that restrictions should be placed upon doing business abroad. Such decisions are certainly appropriate on moral/political considerations, but they call for an assessment on a costs/benefits basis before being made. Canada has recently adopted sanctions in respect of doing business in South Africa given the policy of apartheid there. (Interestingly, this policy does not preclude the sale of wheat). In contrast, Canada as a nation continues to follow a policy of encouraging trade generally with Saudi Arabia.

South Africa and Saudi Arabia both differ markedly in human rights matters from Canada (and from each other). What are the differences that result in a differing foreign policy in respect of trade matters? This is not meant to be a cynical comment. Rather, the point is that differing judgments must be made at different points of time, and such judgments are dependent upon a myriad of complex and subtle factors.

The code of conduct for Crown Corporation needs to be developed in a specific fashion in respect of human rights issues in doing business abroad. The code should require of management a detailed consideration of such issues in advance of a decision to move abroad, with a specific plan that takes into account relevant factors. When conflicts are seen to be possible as between basis human rights values as enshrined in Manitoba law and the laws and customs of the intended host jurisdiction, the code should require management to inform and advise the Minister responsible for the Crown Corporation who should then seek guidance from the Attorney General, or Cabinet, as appropriate. It is emphasized that the effective handling of human rights issues in respect of the Crown Corporation's extraterritorial operations is not dealt with primarily through law, but rather, through supervision and control. As owner of the Crown Corporation, the government has the right, power and obligation to ensure that activities of the business in Manitoba comply with Manitoba and Canadian law, activities abroad comply with the laws of the host jurisdiction, and that the activities abroad are conducted in a manner consistent with human rights values in Manitoba. To the extent that doing business abroad involves a host jurisdiction that has significantly different laws and customs in human rights matters, an initial assessment of human rights factors on a costs/benefits type of analysis in doing business abroad must be made before the decision is taken to extend business operations to the foreign jurisdiction. If the decision is to proceed, then periodic assessments should be undertaken and reported to the Minister responsible for that Corporation who, in turn, is accountable for monitoring the situation and making any decisions called for so that the overall best interests of Manitoba are advanced.

This leads to a third recommendation for a Crown Corporation's code of business conduct. Assuming that on a balancing of the costs and benefits, a Crown Corporation like MTX, with government approval and support, decides to do business in Saudi Arabia or some other foreign jurisdiction, notwithstanding the differing human rights and values, then it is also recommended that the corporation have in place in its code of business conduct a statement that ameliorative, compensatory measures will be introduced if persons selected to work in the foreign jurisdiction are denied the employment opportunity because the reasonable conclusion is that the foreign jurisdiction prevents the entry of persons on a basis that would be unlawful discrimination in terms of Manitoba law. Specifically, if a person in Manitoba were to be offered a position by MTX in Saudi Arabia on his/her merits, but the person could not obtain an entry visa to that country because of discriminatory criteria exercised by the Saudi authorities, then the injured person should be given the next available comparable position that becomes available within MTX's business operations in Manitoba or elsewhere abroad. In effect, this approach offers at least a partial remedy to an aggrieved employee because of a lost employment opportunity.

Indeed, where there are to be any significant number of positions available abroad, it is recommended that an employer like MTX, MTS or Bell should have a generally applicable special program to increase opportunities for aggrieved persons in its Canadian operations to compensate for those lost in Saudi Arabia or other foreign jurisdictions. This recommendation was made by the Canadian Human Rights Commission at the time of dealing with its own complaint against Bell (see Communique, Canadian Human Rights Commission, February 16, 1984). It is noted that an extract from the Minutes of an MTS Board of directors meeting of July 28, 1986, suggests that MTX should "emphasize affirmative action for its employees" given that opportunities for women and Jews are restricted in Saudi Arabia. A formal, general statement to this effect should be incorporated into the corporate code of business conduct, with management developing and implementing a specific, workable program.